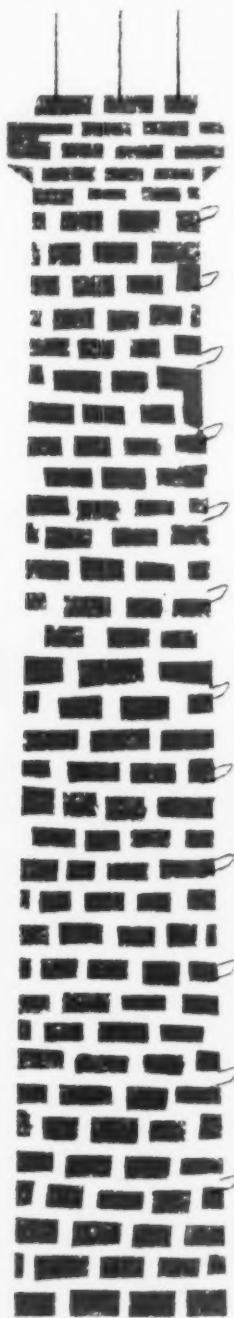
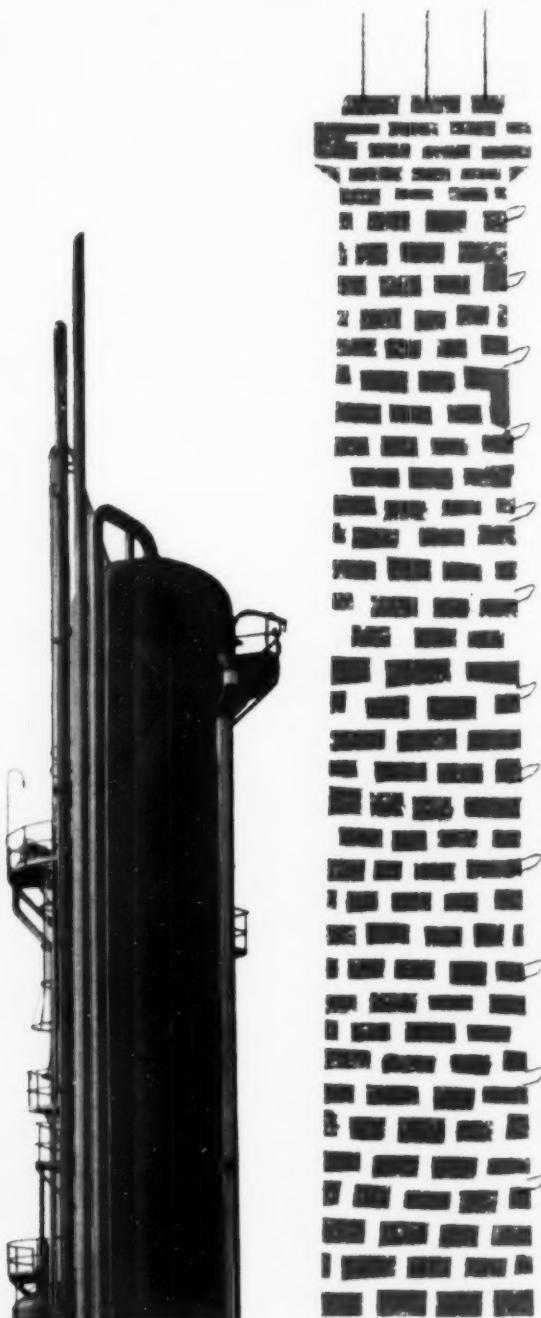


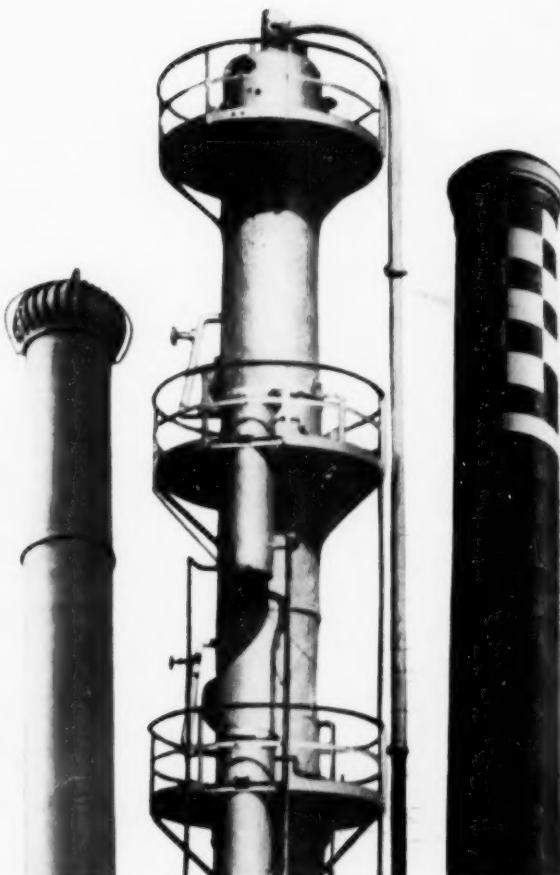
JULY 10, 1957

Sales Management

THE MAGAZINE OF MARKETING



SURVEY OF INDUSTRIAL BUYING POWER



A BILL BROTHERS PUBLICATION

ONE DOLLAR

action in



Equitable Life Assurance Society of U.S.



Trane Company



The Anaconda Company



Phoenix Mutual Life Insurance Co.



Corry-Jamestown Mfg. Corp.



Hartford Fire Insurance Co.



The Dow Chemical Company



Monroe Calculating Machine Co.



Wood Office Furniture Institute



Eastman Kodak Company (Recordak)

*52 new advertisers are
selling the big business market in*

business



Airtemp Div., Chrysler Corp.



Norfolk & Western Railway

A partial list of NEW ADVERTISERS IN NATION'S BUSINESS

Airtemp Div., Chrysler Corp.
American Writing Paper Corp.
The Anaconda Company
Corry-Jamestown Mfg. Corp.
Cunard Steam-Ship Co., Ltd.
F. W. Dodge Corp.
The Dow Chemical Company
Eastern Express, Inc.
Eastman Kodak Company (Recordak)
Equitable Life Assurance Society of U.S.
Hamilton Manufacturing Corp.
Hamilton Watch Company
Hartford Fire Insurance Co.
Insurance Service Association of America
The Lincoln National Life Insurance Co.
Minnesota Mining & Manufacturing Co.
Monroe Calculating Machine Co., Inc.
National Blank Book Company
National Car Rental System
National Gypsum Company
The Nestlé Company, Inc.
Norfolk & Western Railway
Phoenix Mutual Life Insurance Co.
E. George Schaefer
Sheraton Corp. of America
The Stanley Works
Stran-Steel Corp.
Trane Company
Western Pacific Railroad
Wood Office Furniture Institute

52 new advertisers contribute to an 18.2% increase in advertising lineage in Nation's Business for the first half of 1957 over the same period in 1956. June is the 18th consecutive month in which Nation's Business has shown an advertising lineage increase. Reason? Nation's Business gives advertisers greater circulation among owners, partners and presidents than the next two business magazines combined. Of its 779,000 subscribers, 550,000 are on the ownership level. Action in business results when you advertise to America's key executives—in Nation's Business.

Nation's Business

779,902 PAID CIRCULATION
(A.B.C.), including 75,154 executives
of business members of the National
Chamber of Commerce and 704,586
businessmen who have personal sub-
scriptions.

ADVERTISING
HEADQUARTERS:
711 THIRD AVENUE
NEW YORK 17, N.Y.

Washington • Chicago
Philadelphia • Detroit
Cleveland • San Francisco

Nation's Business

FIRST in business and among weekly

BUSINESS AND INDUSTRIAL ADVERTISING PAGES IN NEWS AND MANAGEMENT MAGAZINES

1950	1951	1952	1953	1954	1955	1956
BUSINESS WEEK 3,520	BUSINESS WEEK 4,599	BUSINESS WEEK 5,210	BUSINESS WEEK 5,468	BUSINESS WEEK 5,163	BUSINESS WEEK 5,329	BUSINESS WEEK 5,598
TIME 1,650	TIME 2,079	NEWSWEEK 2,032	"USN&WR" 2,058	"USN&WR" 2,179	"USN&WR" 2,353	"USN&WR" 2,607
NEWSWEEK 1,486	NEWSWEEK 1,859	TIME 1,997	NEWSWEEK 1,931	NEWSWEEK 1,823	NEWSWEEK 1,910	NEWSWEEK 2,255
FORTUNE 919	"USN&WR" 1,296	"USN&WR" 1,796	TIME 1,878	TIME 1,790	TIME 1,765	TIME 2,007
"USN&WR" 798	FORTUNE 1,161	FORTUNE 1,363	FORTUNE 1,576	FORTUNE 1,475	FORTUNE 1,420	FORTUNE 1,826
NATION'S BUSINESS 329	NATION'S BUSINESS 305	NATION'S BUSINESS 360	NATION'S BUSINESS 403	NATION'S BUSINESS 412	NATION'S BUSINESS 401	NATION'S BUSINESS 486

Source: Publishers Information Bureau

America's Class News Magazine

industrial advertising news magazines

BUSINESS and industrial advertisers have increased their use of the news and management field by almost 70% since 1950. Of the total gain of 6,077 pages, almost a third, or 1,809 pages, went to just one magazine—"U.S.NEWS & WORLD REPORT."

"IMPORTANT NEWS"—

A major reason for this growth record

Three out of four of "U.S.NEWS & WORLD REPORT's" 900,000 subscribers hold managerial jobs throughout American business, industry, government and the professions. They give thorough and intensive readership to "U.S.NEWS & WORLD REPORT" each week because the magazine concentrates on the *important* and *urgent* news which directly affects their business and personal plans and decisions. In poll after poll of key management and public opinion groups, "U.S.NEWS & WORLD REPORT" consistently receives the most votes as the magazine "most useful" to them in their work, and the magazine in which they place "most confidence." Advertisers, naturally, benefit from this reading preference.

An essential magazine

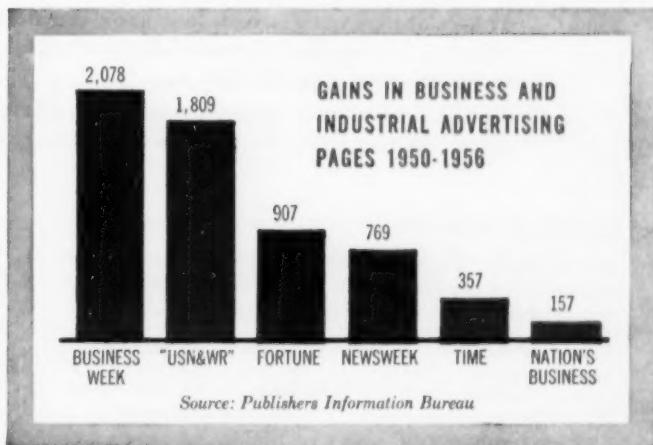
Essential to more and more readers

Essential to more and more advertisers

Now more than 900,000

**NET PAID CIRCULATION . . . a market
not duplicated by any other magazine in the field**

Advertising offices, 45 Rockefeller Plaza, New York 20, N. Y.
Other advertising offices in Boston, Philadelphia, Cleveland, Detroit,
Chicago, St. Louis, San Francisco, Los Angeles and Washington



FOR ADVERTISERS OF ENGINEERING MATERIALS, PARTS AND FINISHES



The materials-specifying function is performed by men in these technical title-groups:

**Engineers • Designers • Research & Development Men
Metallurgical & Chemical Men • Production Men • Technical Executives**

Titles alone are not a reliable indication of materials-specifying influences. The selection of materials is a function of *some* of the men in each of these title-groups. But not *all* the men in any one title-group perform it.

Here is a summary of the basic reasons why MATERIALS IN DESIGN ENGINEERING is the most-direct, lowest-cost means to reach and sell materials specifiers whatever their titles may be:

MARKET SERVED

MATERIALS IN DESIGN ENGINEERING serves the men responsible for the selection of engineering materials, parts and finishes in plants manufacturing these products:

Automotive Products and Parts	Light Machinery, Business Machines, Instruments
Aircraft, Engines and Parts	Ordnance
Electrical Equipment	Building Equipment and Products
Household Appliances	Process Industries Equipment
Agricultural Equipment	Ships, Boats, Marine Equipment
Railway Equipment and Rolling Stock	Containers
Heavy Machinery and Machine Tools	Fine Metalware, Jewelry and Novelties
Hardware, Cutlery and Tools	

CIRCULATION

MATERIALS IN DESIGN ENGINEERING's paid subscribers make up the only audience brought together on the basis of a common interest in problems of materials selection and application. Total net paid ABC circulation (based on the November, 1956 issue)* is as follows:

Title-Group	Number	Per Cent
Engineers & Designers	13,422	42%
Production Men	3,788	12%
Metallurgical & Chemical Men	2,963	9%
Corporate Officials	3,944	13%
Company Subscriptions	4,610	15%
Sales Personnel	777	3%
Purchasing Personnel	401	1%
All Other Subscriptions	1,162	4%
Not Yet Classified	629	2%
Total Net Paid	31,696	100%

*MATERIALS IN DESIGN ENGINEERING's net paid circulation now exceeds 32,000.

EDITORIAL COVERAGE

Every editorial page in MATERIALS IN DESIGN ENGINEERING

is devoted exclusively to the selection and most effective use of the five basic groups of engineering materials used in product design and manufacture. Irons & Steels, Nonferrous Metals, Nonmetallic Materials, Parts & Shapes, Finishes & Coatings.

MATERIALS IN DESIGN ENGINEERING publishes more on *how* and *where* to use engineering materials (including all developments in processing methods which affect materials selection) than any other magazine.

READERSHIP

The appeal of MATERIALS IN DESIGN ENGINEERING to the reader rests solely on his responsibility for materials selection. This magazine's highly specialized editorial content attracts from each title-group just those men who do participate in materials specification.

As a result of this screening, advertisers in MATERIALS IN DESIGN ENGINEERING reach all *materials specifiers* without the waste involved in covering entire title-groups which would include many men who do not specify materials.

ADVERTISING LEADERSHIP

More companies advertise engineering materials, parts and finishes in MATERIALS IN DESIGN ENGINEERING than in any other magazine. (Advertising pages of MATERIALS IN DESIGN ENGINEERING are checked by the Lyndon Service. Tabulations are available on request.)

A representative will be glad to discuss the MATERIALS IN DESIGN ENGINEERING market for *your* products. See adjacent listing for additional information.

Materials in Design Engineering

SELECTION & USE OF METALS, NONMETALLICS, PARTS, FINISHES

FORMERLY
Materials & Methods



A REINHOLD PUBLICATION
430 Park Avenue, N. Y. 22, N. Y.

ABC—ABP

SALES MANAGEMENT

Sales Management

THE MAGAZINE OF MARKETING

JULY 10, 1957

VOLUME 79, NO. 2

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Looking Back—And Ahead

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Foresees widespread use by N.I.A.A. members

How We Use the S.I.C.

150 industrial executives tell SM what kinds of data they want; where they look for their information; what, specifically, they expect from government, industry and publications, and what "experience" factors they "mix" with the data to convert them into reliable yardsticks

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Your market is made up of companies that buy your product or service as a solution to a particular problem, and because the S.I.C. classifies by products produced and operations performed, it helps you determine what plants need your product and how best to approach them

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SALES MANAGEMENT, with which is incorporated PROGRESS, is published the first and third Friday of every month, except in May, July, September and November when a third issue is published on the tenth of the month. Affiliated with Bill Brothers Publishing Corp. Entered as second class matter May 27, 1942, at the Post Office, Philadelphia, Pa., under the act of March 3, 1879. Publication (printing) office, 1309 Noble St., Philadelphia, Pa. Address mail to 386 Fourth Avenue, New York 16, N. Y.

SALES MEETINGS, Part II of Sales Management, is issued six times a year—in January, March, May, July, September and November. Editorial and production offices: 1212 Chestnut Street, Philadelphia 7, Pa., Walnut 3-1788; Philip Harrison, General Manager; Robert Letwin, Editor.

JULY 10, 1957

5



Audit
Bureau
of
Circulations



Associated
Business
Publications



National
Business
Publications



Publishers
Association

The Survey of Industrial Buying Power— Looking Back—and AHEAD

Nearly three decades ago, 1929 to be exact, some intrepid souls in the SALES MANAGEMENT office thought the roaring twenties needed a measuring stick. The government hadn't counted noses since 1920; it hadn't released a real census of retail, wholesale or manufacturing sales; income never had been broken down beyond the state level.

Led by Henry J. Wright (now deceased), who was sort of financial editor-without-portfolio, and assisted by Ray Prescott, economist-statistician, SALES MANAGEMENT took the unparalleled step of showing in state and county detail how many people there were and how much they earned. Neither subscribers nor advertisers were greatly excited. Business was too good that year. Who cared about details? Who knew how to apply such information?

The boys on the advertising staff didn't get very rich on that Survey, for the advertising volume was only a fraction over \$4,000—a far cry from the \$303,395 in billing from the May 10, 1957 issue.

But then came Black Thursday and the start of our worst depression. The need for such data became apparent as sales organizations strove to move sticky inventories and to keep at least a few of the company smokestacks billowing. During the worst depression years SALES MANAGEMENT gave them more information and better information on population, retail sales and income within the limits of its narrow budget, for the 1930-34 period was not one of great prosperity for our Magazine of Marketing.

But each succeeding year, without exception, the *Survey of Buying Power* grew larger in both editorial and advertising content, and shortly after the end of World War II the needs of the Survey required a year-round staff of economists and statisticians, and the magazine founded a wholly owned research subsidiary, Market Statistics, Inc., under the direction of Dr. Jay M. Gould.

The May 10 issue became a national institution, accepted and used almost universally by manufacturers, advertising agencies, media sellers, retail chains, charitable organizations, government departments and bureaus. It figures as evidence in courts, in labor-management arguments, in quasi-judicial bodies such as the Civil Aeronautics Board and the Federal Communications Commission. The Treasury department uses the Survey income estimates, instead of its own income tax returns, for setting bond drive quotas.

Early in the post-war years the ever-increasing number of marketing executives who sell to *industry* began to ask for a comparable service in the capital goods field. After much experiment and research, including significant contributions from many of these same subscribers, reliable formulae for updating Census data began to emerge.

Starting in 1948 the Survey published a section in its May 10 issue which gave these industrial marketing executives exclusive updated information about employment and plants for leading counties in 2-digit industries and, more recently, gross sales in 3-digit industries.

It was good—but wasn't enough, so industrial subscribers told us.

So, starting this July 10, and on the same date henceforth, we "spin off" the industrial section of the consumer survey with this "Survey of Industrial Buying Power." It's off to a fast start, but still has a way to go before it reaches the dimensions of its bigger twin, May 10.

We hope you like it. Tell us, won't you? And give us suggestions for further improvement next year.

PHILIP SALISBURY
Editor and Publisher

Sales Management
THE MAGAZINE OF MARKETING

EXECUTIVE OFFICES, 386 Fourth Avenue
New York 16, N. Y. LExington 2-1760

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Assistant Director, Edward S. Hoffman
Subscription Manager, C. V. Kohl

U. S. and Canada: \$10 a year

Foreign: \$15

ADVERTISING SALES

For Offices and Personnel
See Advertisers' Index
(page preceding back cover)

O F F I C E R S

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Practice, INDUSTRIAL: Rubber
World, Plastics Technology, MERCHANDISING: Fast
Food, Floor Covering Profits,
Grocer-Graphic, Tires, and Yankee Grocer.
Copyright, Sales Management, Inc., 1957



S A L E S M A N A G E M E N T

Your Markets are Changing!

TO HELP YOU FIND AND SELL NEW MARKETS



Industrial Equipment News

will spot your product story before specifiers and buyers in the largest, most active plants in all industries when they are looking for their current product needs. COST? Only \$165 to \$175 a month.

THROUGH IEN YOU WILL REACH

the 40,000 most active, best rated plants and buying offices throughout all 452 industries, including government agencies and consultants. Number of employees and value added, as well as ratings, are used to select the most productive plants. 86.5% are rated \$100,000 or over; 59.7% \$1,000,000 or over. Lists are updated by daily access to the records of Thomas Register.

Total distribution, 74,517 . . . 66,878 officials with product selecting authority . . . 88.1% by reader request, 86.6% addressed to individuals, 99.2% of readers verified; 83.8% from reader or responsible firm member, 15.3% by directory check; 87.3% titled to engineering and plant operation. Current verification replies indicate 88.1% read IEN regularly; 11.3% occasionally; 45.7% use IEN regularly for buying reference; 51.2% occasionally.

Functional Breakdown: Production Management: primary 37.5%; secondary, 12.2%. Plant Engineering and Operation: primary, 39.6%; secondary, 11.8%. Product Design and Engineering: primary, 30.9%; secondary, 11.5%. Purchasing: primary, 28.1%; secondary, 15.0%. **Purchasing Breakdown:** (Reported by 4.2% of IEN readers, Dec. 1953) Building and Properties, 20.1%; Heating and Ventilating, 30.4%; Lighting and Communicating, 26.1%; Power and Transmission, 32.8%; Materials, Parts, Supplies, 34.2%; Materials Handling, 36.2%; Production and Equipment Tools, 44.5%; Production Control, 30.1%; Service to Production, 41.2%.

WHY THEY READ IEN: IEN contains nothing but *PRODUCT news and information*, thereby attracting those who already know *how* and need most to know *what with*. It publishes the *latest* and most accurate product news, the *most* product news items . . . more than 1,000 product descriptions per issue, including the largest number of ads in any business monthly, weekly or daily: in 1956, 1,419 advertisers bought 9,840 ads. IEN's *completeness* makes it the first choice of product selectors.

YOUR PRODUCT STORY WILL BE SEEN WHEN buyers are looking for product information for *what's new*. But it stays on the desk for frequent reference, greatly aided by the exclusive IEN front page Product Finding Index. And every ad is next to product news columns.

COST: IEN puts a ceiling on advertising expense by providing standard 1/9 page space units (3 1/4 x 4 1/4 inches) quite adequate to tell your product story. Readers are looking for products. Hence you don't have to look for prospects or waste space on eye-catching devices. You buy all-industry saturation at one-industry rates, \$165 to \$175 a month . . . \$1,980 a year . . . the BIGGEST little item on 1,400 ad budgets.

DETAILS?

Send For Complete Media Data File



IEN has been called 'the best documented of industrial media'. It published the first NIAA report. Its BPA audit contains information not usually included. Many special studies add to the wealth of criteria by which you may measure IEN's value to you. Please let us send you this helpful Data File.

Industrial Equipment News

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Thomas Publishing Company, 461 Eighth Avenue, New York 1, N. Y.



Will 1958

be kind to you?

YOUR 1958 SALES CAN BE BOOSTED BY
OPENING NEW MARKETS CREATED
BY A HOST OF NEW PRODUCTS

Every new product requires new parts, new materials, new manufacturing equipment. In 452 industries, purchases of 1958 needs are developing fast.

The chief reliance of product selectors in preparing for 1958 product and production needs is Industrial Equipment News.

No other paper approaches the standard of accurate completeness maintained for 24 years by Industrial Equipment News, originator of the field of product news and information publishing.

"**YOUR MARKETS ARE CHANGING**" is the name of a 20-page brochure which briefly points up the importance of preparing now to tell your product story to NEW, as well as existing markets next year.

Send for your copy

Industrial Equipment News

IEN

Thomas Publishing Company

BPA 461 Eighth Avenue, New York 1, N. Y.
NBP Affiliated with Thomas Register

9 out of 10

CEP
Chemical
Engineers
specify
and buy
chemical
process
equipment
and
materials
by brand
name!*

PEERLESS PUMPS

CEP reaches the man
in responsible charge
in the C.P.I.

* From the report of a recent
study made for Chemical
Engineering Progress. For a
copy of the complete report,
contact your CEP
representative or write to:

ABC Chemical Engineering Progress

Published exclusively for Chemical Engineers
by American Institute of Chemical Engineers
25 West 45th Street, New York 36, N.Y.

50th ANNIVERSARY—1958
AMERICAN INSTITUTE OF CHEMICAL ENGINEERS
In your advertising plans, include the
May 1958 Anniversary Issue!



271 MADISON AVENUE
NEW YORK 16, N.Y.

NATIONAL INDUSTRIAL ADVERTISERS ASSOCIATION

July 1, 1957

Mr. John Hartman
Sales Management
386 Fourth Avenue
New York 16, N.Y.

Dear Mr. Hartman:

It is a pleasure to salute the publishers of *SALES MANAGEMENT* on their new and improved *Survey of Industrial Buying Power*—the first of an annual series now to be published each July 10.

Giving up-dated government data and your own original estimates a separate identity and a status of importance, which they deserve, makes a significant contribution to better-planned industrial marketing—one our members will appreciate and, more important, will use.

Marketing people want and need vital statistical data—and the more recent the better. Unfortunately, the government's gathering, sorting, and publishing processes are so involved and complex that the results are often distressingly late. The economy of the day may well be quite different from that of the benchmark period.

But with your facilities for projecting census figures—facilities well proven by the 28-year history of the May 10 survey—you can so distill the government findings as to make them tools of today and tomorrow for the industrial marketing executive.

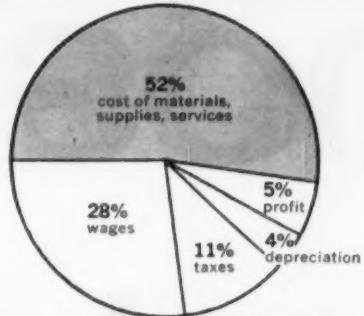
I predict that our members will make widespread use of your estimates and articles, for such purposes as:

1. Setting up sales potentials and quotas by 2-, 3-, and 4-digit S.I.C. industries.
2. Determining reasonable sales quotas for distributors and/or salesman, by S.I.C. industries as well as geographically.
3. Preparing the advertising budget.
4. Distributing the advertising budget by S.I.C. breakdowns and relating these to sales potentials.
5. Allocating the advertising dollar among the media most important in these specific industries.
6. Helping in the location of new plant, branch, and warehouse locations.

Our best wishes for every success.

Sincerely,

JOHN C. FREEMAN
President



Breakdown of sales dollar in average industrial company

In industry the purchasing department is responsible for spending an average of 52 cents of the sales dollar for materials, supplies and services

76.3% of 1750 requisitions studied in 17 companies specified the product to be purchased but did not specify brand or source. Selection of supply sources is determined by the purchasing department in three cases out of four.

Purchasing Magazine is read by more industrial buyers because it gives them more methods information

25,000 circulation

PURCHASING Magazine reaches 25,000 key purchasing people through paid subscriptions supplemented by carefully selected controlled circulation.

The publishers conduct a continuing company-by-company study of buying patterns throughout the entire industrial field. This assures advertisers of the most complete coverage of industrial purchasing agents available.

Information learned from this continuing study permits us to spot omissions and cover with controlled circulation immediately. This is followed by intensive effort to convert this new circulation to paid. See next column for breakdown of total circulation by Standard Industrial Classification numbers.

DISTRIBUTION BY INDUSTRY

SIC	INDUSTRY	CIRC.
19	Ordnance	33
20	Food	461
21	Tobacco	22
22	Textiles	246
23	Apparel	58
24	Lumber	140
25	Furniture	174
26	Paper	404
27	Printing	233
28	Chemicals	741
29	Petroleum Processing	180
30	Rubber	171
31	Leather	63
32	Stone, Clay, Glass	383
33	Primary Metals	1003
34	Fabricated Metal Products	3168
35	Machinery	5284
36	Electrical Machinery	2967
37	Trans. Equipment	3112
38	Instruments	708
39	Misc. manufacturing	355
	Mining	183
	Construction	105
	Transportation	166
	Utilities	248
	Industrial and other distributors	495
	Government	533
	Education	316
	All other	1423
	File, samples, checking	1665
		25,040

Note: The 1423 names classified above as "all other" represent industrial concerns and are being checked to determine SIC classification.

Tell your story to purchasing agents, the men who turn requisitions into orders...through the pages of PURCHASING, the methods magazine for over 25,000 industrial buyers.

PURCHASING
MAGAZINE  

205 E. 42nd St., New York 17, N. Y.
a Conover-Mast publication



the most way to America's Buying

#1 Buy in Industrial READERS. Per advertising dollar, NEWSWEEK delivers more readers in industry than any other major news or business magazine. Specifically: NEWSWEEK delivers 80.2 readers in industry; U.S. News & World Report, 74.9; Time, 60.2; Business Week, 55.3; Fortune, 42.0.

#1 Buy in Purchasers of CAPITAL EQUIPMENT. In 1956 an industry-inspired survey of itself revealed that in 82% of companies studied, recommendations on re-equipment outlays were made by technical management personnel. NEWSWEEK delivers more readers in this area, per advertising dollar, than any—ANY—other weekly news or business magazine.

#1 in BUSINESS, INDUSTRY, GOVERNMENT. NEWSWEEK delivers more readers in the B-I-G market, per advertising dollar, than any other weekly news or business magazine. 86.3% of NEWSWEEK's 1,100,000 circulation is concentrated here. And 70.7% influence purchases in connection with their work.

Newsweek...

efficient reach Industrial Power

#1 in INDUSTRIAL ADVERTISING PAGE GAINS. NEWSWEEK in 1956 led all other weekly news and business magazines in both percentage and number of page gains from industrial advertisers—capping consistent year-by-year gains in this area since World War II.

#1 in CORPORATE ADVERTISING. In 1956, NEWSWEEK led all magazines in advertising pages run in the 50 largest corporate campaigns. Ask for a summary of NEWSWEEK's *Continuing Study of Magazine Coverage of Industry*; and a reprint of

NEWSWEEK's latest report on its *Survey of Capital Appropriations* conducted by the National Industrial Conference Board. Write to Director of Research, NEWSWEEK, 152 West 42nd Street, New York 36, N.Y.

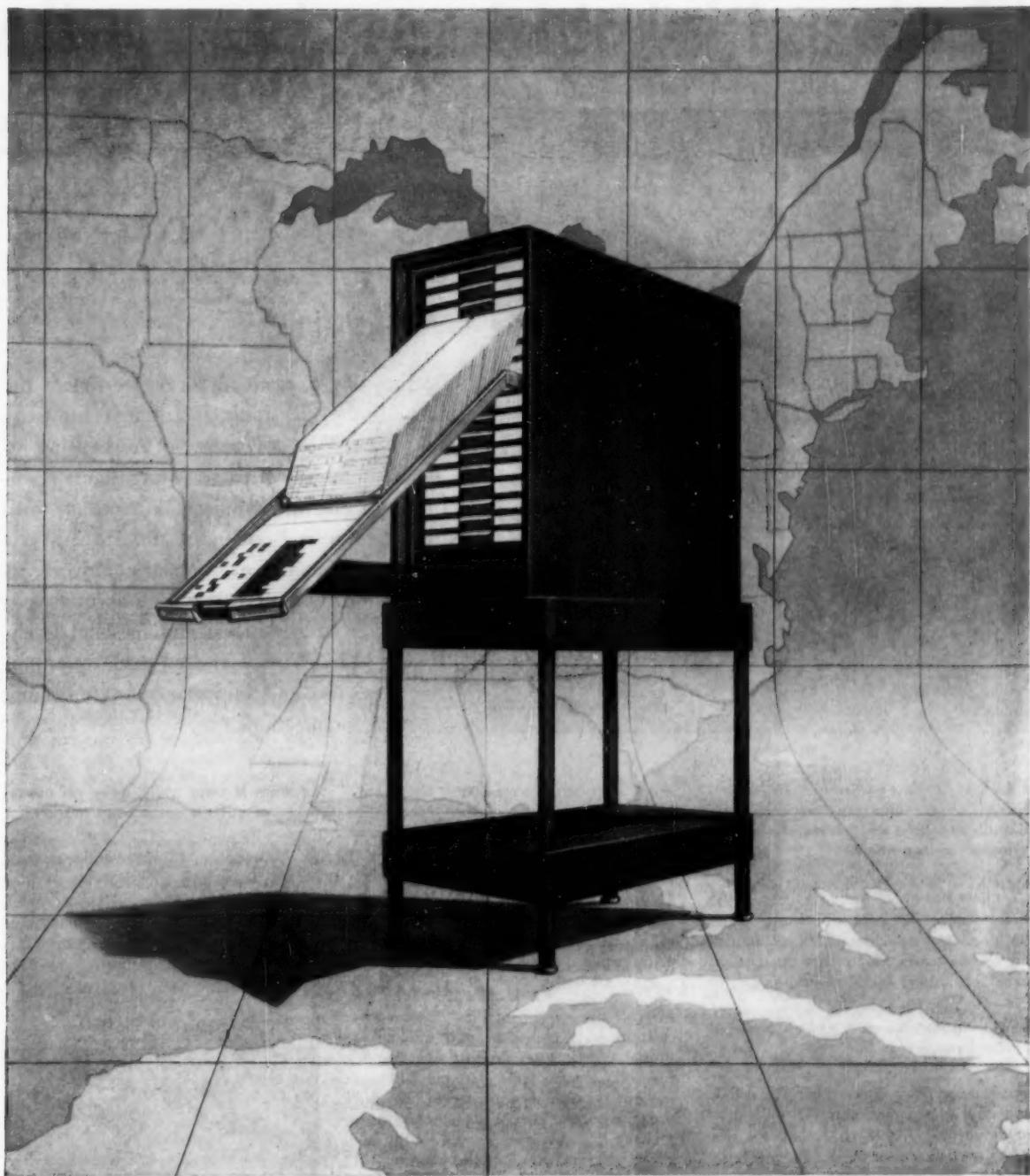
the magazine for com-mu'ni-ca'tive people

CROSS INDEX OF 4-DIGIT INDUSTRY DATA

By Products, Plants and Processes, S.I.C. Code Numbers and Page Numbers

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Remington Rand
DIVISION OF SPERRY RAND CORPORATION

"Trade and industrial magazines are the



From pygmy to giant in 20 years—that is the story of the electronic instrument industry. George H. West is Director of Advertising for one of the oldest of these young giants, Consolidated Electrodynamics Corporation, with headquarters in Pasadena, Calif. He is also a director of the National Industrial Advertisers Association and has served on numerous committees at both local and national levels. Recently Mr. West answered some questions about the use and importance of trade and industrial publications.

Q Mr. West, yours is an industry which has shot up like Jack's beanstalk. Would you give us the picture of that growth, as you see it?

A The electronics industry is now the third largest contributor to our gross national product. Steel and automotive are the first two. Electronics chalked up \$11.1 billion in sales last year.

Q How about the story of Consolidated Electrodynamics?

A Our company, formed early in 1937, was one of the pioneers. Our original staff had 13 people, and sales for our first year amounted to \$70,000. Now we employ over 3300, and expect to gross over \$35 million in '57. We have seven plants in southern California and another in Rochester, N.Y.

Q What products do you produce?

A We sell a wide range—from tiny pressure transducers at about \$100 to analytical mass spectrometers at \$40,000 and complete data processing systems costing many hundreds of thousands. At Rochester, we produce a complete line of high vacuum equipment. Glendale designs and makes high temperature

miniature connectors. And the Electronic Industries Division produces etched wiring, transistorized circuitry, and special test instruments.

Q With a range like that, in a fast-growing industry like yours, I can guess that your advertising problems are far from static.

A You are very right. First, we have to sell the idea of a new and unfamiliar industry, with a vocabulary that sounds like nonsense syllables to most of our customers. Our products are new and ever-changing. Their existence and uses are totally unknown to many of our prospects, and some of the people who need them most don't even know the need exists. Couple these problems with our own wish to create a favorable attitude toward a company which has only been in business for 20 years, and you begin to see the complexity of our promotional problems.

Q What is your primary market?

A 20 years ago, that would have been an easy question. But today we sell in more than 25 different fields, ranging from the medical profession to guided missiles.

Q What is your philosophy on advertising to such a spread-out market?

A We use about 50 trade and industrial publications, and spend about 38% of our total budget there. Direct mail, sales bulletins and catalogs, visual aids, and product publicity support this effort. From the very beginning, we have had a planned advertising program.



"We use about 50 trade and industrial publications, and spend about 38% of our total budget there."

backbone of our advertising program."

Q What are the objectives of your trade and industrial advertising?

A The most important one is to save the time of our sales engineers. Even with 20 well-staffed sales offices throughout the country it is obvious that cold-call selling is practically out of the question, because of the complexity of our products and the diversity of their use. Instead we have to get productive leads for our sales staff. Our advertising is aimed at selling the value of electronic instrumentation in general, at creating preference for Consolidated, and at getting the prospect to take some positive action.

Q How do you choose the magazines to do this kind of a job?

A Media selection is certainly of major importance, and we take it very seriously at Consolidated. We have our own Media Research Department, which carefully analyzes material furnished by publishers and circulation audits and readership studies from outside organizations. In addition we keep our own qualitative records of inquiries. We study the editorial content of all magazines going to our fields and conduct our own readership studies. Our average return on these, incidentally, is better than 60%. We use the unaided recall technique to determine which magazines they read regularly and which are of the most use to them in their trades and industries.

Q Is your advertising budget based on the task method?

A You would probably describe our method as modified task. Our overall budget is influenced by total expected sales, but the budget for individual products is kept flexible. In this way we can shift emphasis as the need arises. Our Market Planning Committee is responsible for monthly scrutiny of the entire market in reference to our products so that we can take advantage of new developments as they arise.

Q Does your sales force realize the value of advertising in trade and industrial publications?

A Definitely. Our salesmen are continually asking us to do more of it. And the information we get from them concerning sales resulting from advertising inquiries helps us sell top management on the value of the expenditure.

Q Is there any other point that you would like to emphasize?

A Yes. Trade and industrial magazines are the backbone of our advertising program. To get best results from the

money we spend in them, we maintain consistent schedules, select our media with care, and present our story in a clear, concise way. Our advertising in the trade press has produced excellent results, and we expect it to continue to do so.



"Trade and industrial magazines are the backbone of our advertising program. To get best results from the money we spend in them, we maintain consistent schedules, select our media with care, and present our story in a clear, concise way."

Through the use of trade and industrial publications you are able to communicate with your customers and prospective customers in an atmosphere that is natural to them and most productive for you. In this respect, today's reliable business press serves a purpose unduplicated by any other selling force.

Chilton publications cover their chosen fields with an editorial excellence and a strict control of circulation that assure confidence on the part of readers and advertisers. With such acceptance goes proportionate selling power.



Chilton COMPANY

Chestnut and 56th Streets • Philadelphia 39, Pennsylvania



CHILTON PUBLICATIONS: Department Store Economist • The Iron Age
Hardware Age • Spectator • Hardware World • Jewelers' Circular-Keystone
Automotive Industries • Gas • Distribution Age • Optical Journal and
Review of Optometry • Motor Age • Boot and Shoe Recorder • Commercial
Car Journal • Butane-Propane News • Electronic Industries • Book Division

CROSS INDEX OF 4-DIGIT INDUSTRY DATA

By Products, Plants and Processes, S.I.C. Code Numbers and Page Numbers

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A leading research organization, Alfred Politz Media Studies, proved the Influential's existence in a new study on The Saturday Evening Post. Among other things, this study shows that 8 out of 10 Post readers recommend or talk about things they've seen on its pages. That means 1 out of every 9 people in the United States ten years and older is a Post-Influential.

Think what this means to you! A vast mass of Post-Influentials live right in your sales area—buying the products, starting the trends and passing the word for anything you sell that's advertised in The Saturday Evening Post.

The Saturday Evening
POST

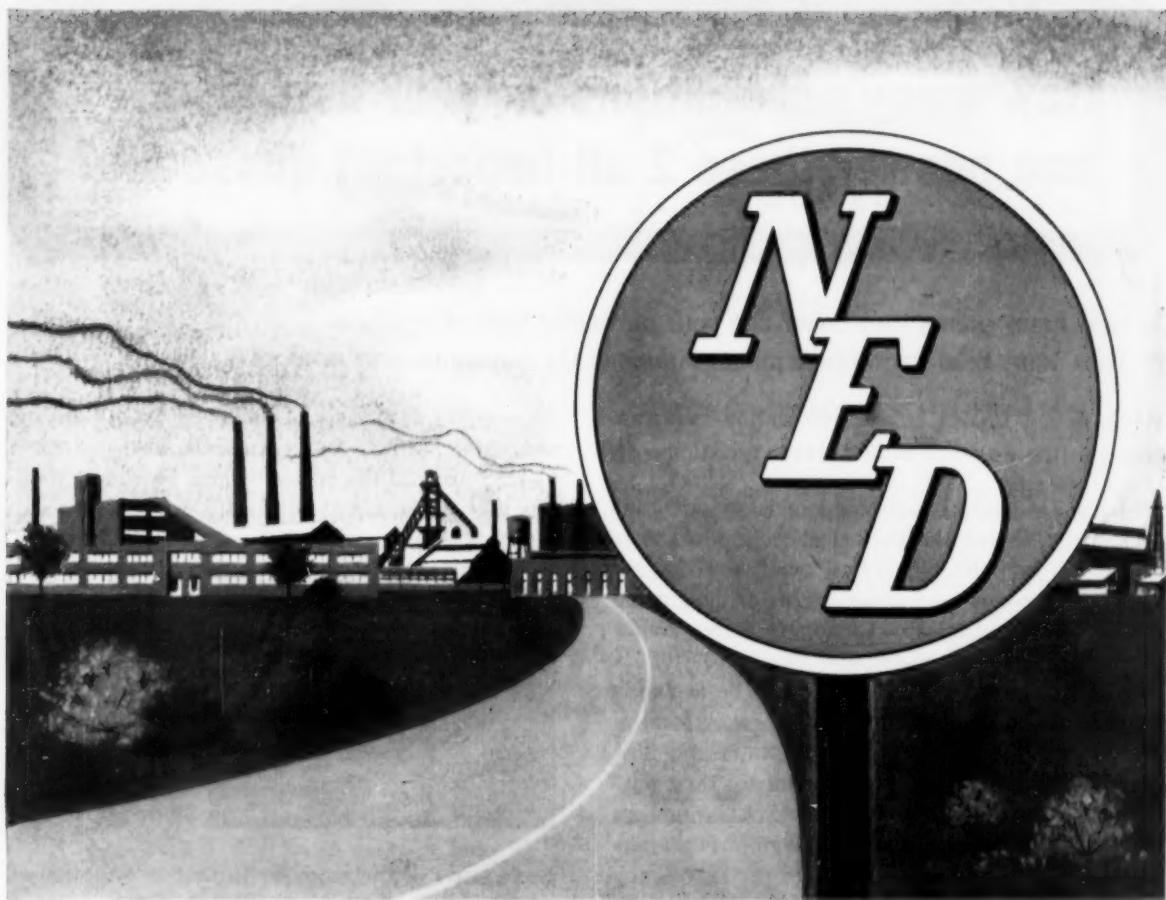
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-the mass market of active influence

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Pipe, sewer	3254 82	Rice milling	2044 58	Tile, floor and wall	3253 82
Pipe, welded and heavy-riveted	3393 84	Robes and dressing gowns	2384 63	Tin cans and other tinware	3411 86
Plants, millwork	2431 65	Rolling and drawing, n.e.c.	3359 84	Tires and inner tubes	3011 80
Plants, plywood	2432 65	Rolling and drawing, aluminum	3352 84	Tobacco, chewing and smoking	2131 61
Plants, poultry dressing	2015 58	Rolling and drawing, copper	3351 84	Tobacco stemming and redrying	2141 61
Plants, scouring and combing	2211 62	Roofing felts and coatings	2952 74	Toilet preparations	2893 72
Plastic materials	2823 72	Rubber footwear	3021 80	Tools, edge	3422 86
Plastics products, n.e.c.	3971 108	Rubber industries, n.e.c.	3099 80	Tools, hand, n.e.c.	3423 86
Plating and polishing	3468 86	Rubber, reclaimed	3031 80	Tools, machine	3541 94
Plumbing fixtures and fittings	3431 86	Rubber, synthetic	2824 72	Tractors	3521 94
Plumbing fixtures, vitreous	3261 82	Saddlery, harness and whips	3192 81	Trailers, automobile	3716 104
Plywood plants	2432 65	Safes and vaults	3492 90	Trimmings and art goods	2396 64
Pottery products, n.e.c.	3269 82	Salt	2898 72	Transformers	3615 102
Poultry dressing plants	2015 58	Sawmills and planing mills	2421 65	Trousers, separate	2327 63
Power-transmission equipment	3566 96	Saws, hand, and saw blades	3425 86	Truck and bus bodies	3713 104
Prefabricated wood products	2433 65	Scales and balances	3576 96	Trucks and tractors, industrial	3565 96
Preparations, food, n.e.c.	2099 60	Schiffli-machine embroideries	2397 64	Trucks and trailers	3715 104
Preparations, pharmaceutical	2834 74	Scientific instruments	3811 108	Tubes, collapsible	3496 90
Preparations, toilet	2893 72	Scouring and combing plants	2211 62	Tubes, electronic	3662 102
Prepared animal feeds	2042 58	Screens, window and door	2561 66	Tucking, pleating and stitching	2395 63
Prepared meats	2013 58	Screw machine products	3495 90	Typesetting	2791 70
Press and blown glass, n.e.c.	3229 82	Sea food, canned	2031 58	Typewriters	3572 96
Primary aluminum	3334 84	Sea food, packaged	2036 58	Underwear, men's and boys'	2322 63
Primary batteries	3692 102	Seamless hosiery mills	2252 62	Underwear, women's and children's	2341 63
Primary copper	3331 84	Secondary non-ferrous metals	3341 84	Utensils, earthenware food	3263 82
Primary lead	3332 84	Separate trousers	2327 63	Utensils, vitreous-china food	3262 82
Primary metal industries, n.e.c.	3399 84	Service and household machines, n.e.c.	3589 98	Vacuum cleaners	3584 98
Primary non-ferrous metals, n.e.c.	3339 84	Sewer pipe	3254 82	Valves and fittings, exc. plbg.	3591 98
Primary zinc	3333 84	Sewing machines	3583 98	Vegetable oil mills, n.e.c.	2884 72
Printing, book	2732 70	Shades, lamp	3987 108	Vehicles, children's	3943 108
Printing, commercial	2751 70	Shades, window	2562 66	Veneer mills	2422 65
Printing ink	2891 72	Shingle mills	2423 65	Venetian blinds	2563 66
Printing-trades machinery	3555 96	Ship building and repairing	3731 104	Vitreous-china food utensils	3262 82
Processed textile waste	2294 62	Shirts, dress and nightwear, men's	2321 63	Vitreous-enamede products	3461 90
Products, asbestos	3292 82	Shirts, work	2328 63	Vitreous plumbing fixtures	3261 82
Products, biological	2831 72	Shops, machine	3599 98	Wall paper	2693 67
Products, boiler shop	3443 90	Shortening and cooking oils	2092 60	Watchcases	3872 108
Products, bread and related	2051 60	Silverware and plated ware	3914 108	Watches and clocks	3871 108
Products, canvas	2394 63	Slippers, house	3142 81	Waterproof outer garments	2385 63
Products, carbon and graphite	3612 102	Small leather goods	3172 81	Welded and heavy-riveted pipe	3393 84
Products, chemical, n.e.c.	2899 72	Soap and glycerin	2841 72	Welding, electrical, apparatus	3617 102
Products, chocolate and cocoa	2072 60	Softwood distillation	2862 72	Whiting and fillers	2853 72
Products, cleaning and polishing	2842 72	Soybean oil mills	2883 72	Window and door screens	2561 66
Products, concrete	3271 82	Special dairy products	2025 58	Window shades	2562 66
Products, confectionery	2071 60	Special dies and tools	3544 94	Wire and cable, insulated	3631 102
Products, cork	3982 108	Special-industry machinery, n.e.c.	3559 96	Wire drawing	3392 84
Products, cut-stone and stone	3281 82	Sporting and athletic goods	3949 108	Wirework, n.e.c.	3489 90
Products, electrometallurgical	3313 84	Springs, steel	3493 90	Wiring devices and supplies	3611 102
Products, fabricated metal	3499 90	Stamps and stencils, hand	3953 108	Women's and children's underwear	2341 63
Products, gypsum	3272 82	Steam engines & turbines	3511 94	Women's neckwear and scarfs	2338 63
Products, intermediate coal-tar	2822 72	Steel foundries	3323 84	Women's outerwear, n.e.c.	2339 63
Products, lasts and related	2492 65	Steel-metal work	3444 90	Women's suits, coats and skirts	2337 63
Products, non-metallic mineral, n.e.c.	3299 82	Steel springs	3493 90	Wood furniture, not upholstered	2511 66
Products, paper and board, n.e.c.	2699 67	Stone products and cut-stone	3281 82	Wood office furniture	2521 66
Products, petroleum and coal, n.e.c.	2999 74	Storage batteries	3691 102	Wood preserving	2491 65
Products, plastics, n.e.c.	3971 108	Stores, gum naval	2863 72	Wood products, n.e.c.	2499 65
Products, pottery, n.e.c.	3269 82	Straw hats	2283 62	Wooden boxes	2444 65
Products, prefabricated wood	2433 65	Structural and ornamental works	3441 86	Woodworking machinery	3553 96
Products, purchased glass	3231 82	Structural clay products, n.e.c.	3259 82	Wool-felt hats and hat bodies	2282 62
Products, radios and related	3661 102	Sugar, beet	2063 60	Wool carpets and rugs	2271 62
Products, screw machine	3495 90	Sugar, cane refining	2062 60	Wool, mineral	3275 82
Products, structural clay, n.e.c.	3259 82	Sugar, raw cane	2061 60	Woolen and worsted fabrics	2213 62
Products, textile, n.e.c.	2399 63	Suit and coat findings	2312 63	Work, lapidary	3913 108
Products, vitreous-enamede	3461 90	Suits and coats, men's and boys'	2311 63	Work shirts	2328 63
Products, wood, n.e.c.	2499 65	Suits, coats and skirts, women's	2337 63	Work, steel-metal	3444 90
Professional furniture	2532 66	Sulfated oils and assistants	2842 72	Work, structural and ornamental	3441 86
Public-building furniture	2531 66	Sulfuric acid	2811 72	X-ray and therapeutic apparatus	3693 102
Publishing and Printing, books	2731 70	Surgical and medical instruments	3841 108	Yarn and throwing mills	2222 62
Publishing, miscellaneous	2741 70	Surgical appliances and supplies	3842 108	Yarn mills, cotton system	2224 62
Pulp goods, pressed and molded	2694 67	Suspenders and garters	2383 63	Yarn mills, wool, except carpet	2212 62
		Synthetic broad-woven fabrics	2234 62	Zinc, primary	3333 84



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JULY 10, 1957

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High Average Buying Influence.

In this respect it is interesting to note the consistently high average indication of buying influence among respondents, disclosed by the study. This, of course, is a direct result of the Franchise-Paid circulation method used by **MILL & FACTORY**. This method ensures that the publication go *only* to readers who have the power to initiate requisitions, to specify, to buy.

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MILL & FACTORY builds and maintains its circulation through 1,724 industrial salesmen who can personally identify and enter the subscriptions for the men they must sell... who personally cancel the subscriptions of those who no longer have the power to buy... not at the end of a subscription term of three, two, or even one year but with the very next issue of **MILL & FACTORY**.

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Reader
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Study

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In this issue the editors of **SALES MANAGEMENT** do for industrial marketing the same job that the May 10 *Survey of Buying Power* does for consumer markets—help pinpoint the plants that constitute the market for the entire range of industrial commodities.

To do this we present several different tabulations both at the S.I.C. two-digit level and at the four-digit level.

At the four-digit level we publish estimates for 417 industries for 1954 and 1956. We first give the 1954 Census data on number of plants, employment and gross sales, then the **SALES MANAGEMENT** estimates of gross sales and employment as of January 1, 1957. The updating of sales and employment is particularly necessary in connection with the recently released 1954 Census of Manufactures, since 1954 was a year of industrial recession.

The 1954 figures on gross sales were cleared through the 307-man panel comprising the Board of Analysts of Future Sales Ratings to obtain percentage estimates of increase or decrease in 1956 as compared with 1954 for each industry shown in this study. These percentage figures then were applied to the 1954 figures to arrive at those shown for 1956. The process included checking by Government economists and statisticians, and the average percentage increases or decreases had the benefit of judgment by private industry experts. The final 1956 figures, while they are estimates of course, are as soundly and extensively based as possible, and they represent the only available figures of their kind anywhere in this comprehensive series.

The lack of 1954 Census base figures on certain im-

Sales Management

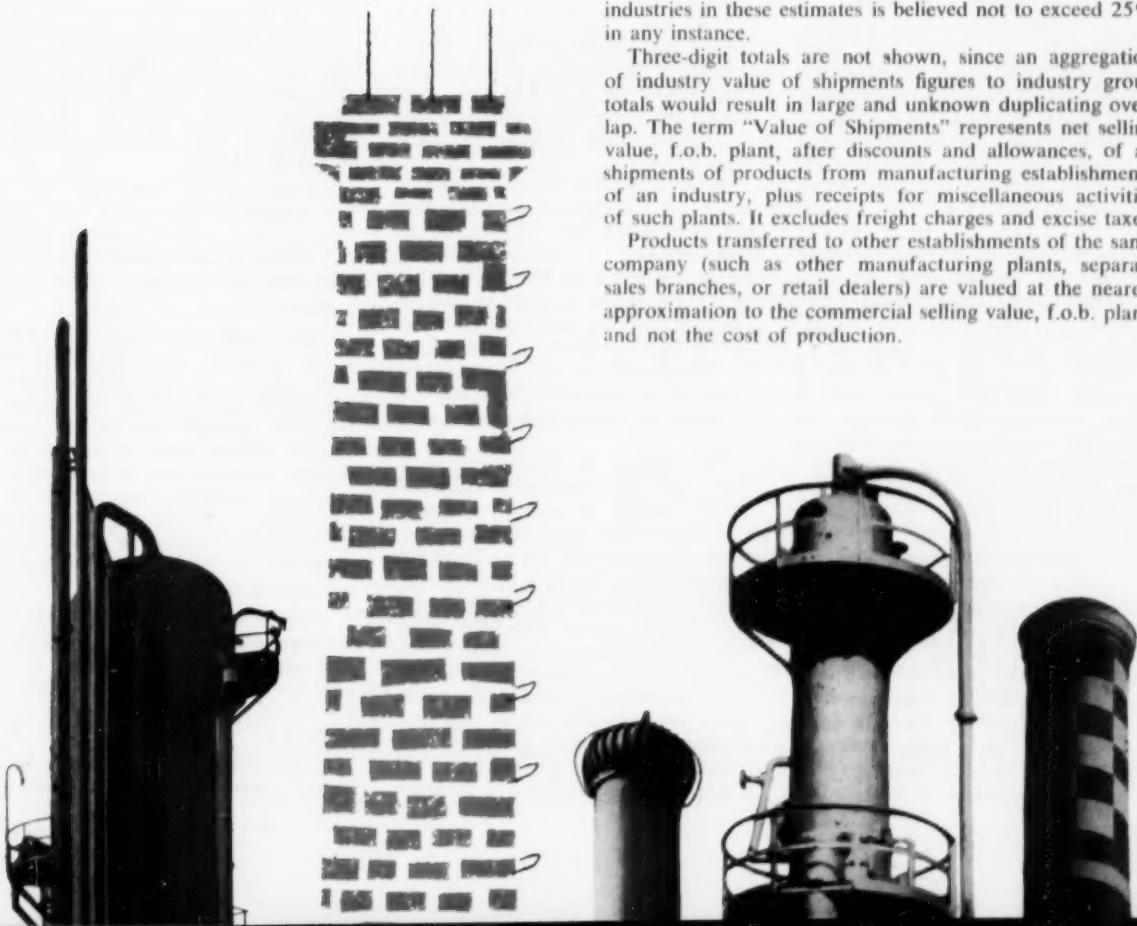
SURVEY OF INDUSTRIAL BUYING POWER

JULY 10, 1957

portant industries which could not be omitted, such as meat packing, wholesale; prepared meats; blast furnaces and steel mills; radios and related products; motor vehicles and parts; aircraft, and refrigeration machinery, created a considerable problem. This situation arose logically from the nature of the industries involved and the essential procedures of the Census Bureau. Thus, the summation of industry value of shipments of these industries would result in large and unknown amounts of duplication, since it would include shipments reported by related industries engaged in successive fabrication stages of the product's manufacture. This duplication is not significant within the four-digit industries covered in this survey, with the exceptions largely of the ones mentioned in the beginning of this paragraph. So the 1954 figures were computed and included in this study on the basis of an average estimate by the Board of Analysts. The inevitable overlap of related industries in these estimates is believed not to exceed 25% in any instance.

Three-digit totals are not shown, since an aggregation of industry value of shipments figures to industry group totals would result in large and unknown duplicating overlap. The term "Value of Shipments" represents net selling value, f.o.b. plant, after discounts and allowances, of all shipments of products from manufacturing establishments of an industry, plus receipts for miscellaneous activities of such plants. It excludes freight charges and excise taxes.

Products transferred to other establishments of the same company (such as other manufacturing plants, separate sales branches, or retail dealers) are valued at the nearest approximation to the commercial selling value, f.o.b. plant, and not the cost of production.



THE 76 BILLION-DOLLAR 4-DIGIT S.I.C. CATEGORIES

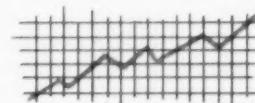
As of January 1, 1957, there were 76 4-digit S.I.C. classifications with gross sales in excess of \$1 billion annually, a gain of 13 over the official Census figures of 1954*.

The 10 largest 4-digit industries as of January 1, 1957 based on gross sales, and the 10 with the greatest growth since 1954, have only one industry in common, that being blast furnaces and steel mills.



LARGEST IN DOLLARS	Gross Sales (\$000,000)
1. Blast furnaces & steel mills	\$14,157
2. Petroleum refining	13,391
3. Meat packing, wholesale	11,073
4. Motor vehicles & parts	10,422
5. Aircraft	7,155
6. Radios & related products	5,717
7. Fluid milk products	4,657
8. Paper & paper board mills	4,574
9. Sawmills & planing mills	3,637
10. Aircraft engines	3,635

*See page 149 for complete list



GREATEST GROWTH	Growth Index '54 to '57
1. Aluminum rolling & drawing	142
2. Plastic materials	139
3. Non-ferrous foundries	137
4. Woolen & worsted fabrics	136
5. Electrical control apparatus	135
6. Electrical appliances	135
7. Motors & Generators	134
8. Blast furnaces & steel mills	130
9. Plastic products, n.e.c.	130
10. Organic chemicals, n.e.c.	129

Therefore, it should be noted that for establishments classified in a given industry the value of shipments includes not only (a) their value of products primary to the industry but also (b) their value of secondary products (which are primary to other industries), and (c) their miscellaneous receipts for repair work, sales of scrap, installation of own products, receipts for contract work, etc. Excluded from the value of shipments, however, are sales of products bought and resold in the same condition.

Similarly, the tabulation of young industries with their greatest growth ahead was developed through the Board of Analysts by averaging the estimates of the degree, in percentages, to which these industries have saturated their market potentials to date.

The estimates of employment for 1956 allow for the increase in gross sales as ascertained above, plus allowances for the two year change in productivity (projected from 1947-1954 benchmark data), plus an estimate of the inflationary changes over the 1954-1956 period resulting from higher wages and higher costs of materials, fuel and machines.

Another big section of data in this

Survey of Industrial Buying Power consists of the number of plants and employment for each S.I.C. two-digit classification for every county in the U. S. with 2,000 or more industrial employment.

A 5-year history underlies this material, for this type of data was first published in the May 10, 1952 SALES MANAGEMENT Survey of Buying Power. In this issue the material has been subjected to a complete and exhaustive updating and refinement, so that it can be rightfully regarded as the culmination of a 5-year development of a complete inventory of industrial marketing data on a county level.

The Census of Manufactures in 1947 and 1954 provided information on the number of plants in each 2-digit class in three size categories (employment under 20, from 20 to 99, and over 100), but very little data on actual employment outside the larger metropolitan areas. Working from this base, we have succeeded in assigning to each plant reported by the 1954 Census an average employment figure for 1956. Our sources represent thousands of separate pieces of correspondence with all chambers of commerce, postmasters, planning

agencies and state employment commissions—contacts which have had the additional effect of discovering new plants—not in operation in 1954 but reported to have over 500 employees in 1956.

In this way we have been able to get around the so-called "non-disclosure" rule, which frequently limits the ability of the Census Bureau to offer any information at all for very large plants.

Those familiar with industrial marketing data will know that chiefly because of this rule the Census Bureau has never released data on employment by industry for all counties. Barred by law from publishing any statistics that disclose information reported by individual companies, the Census has followed the practice of showing employment for a particular industry or locality only when three or more companies are involved.

(The insistence on at least three companies was based on the fact that publication of a total for two firms would enable either firm to establish the statistics of the other firm by subtraction.)

Since manufacturing is highly centralized, there are countless numbers

of cases where the activity of a single county is accounted for by one firm or a pair of firms, and consequently will not show in Census publications.

In preparing the estimates of employment published here, it must be emphasized that no attempt was made to use unpublished Census materials. Our starting point was a tabulation of 1947 and 1954 Census of Manufactures data which showed, for each county in the United States, the number of plants in each of three different size-categories, for twenty industrial classifications. For each of these 180,000 "cells," our research staff prepared estimates of the average number of employees. These estimates were based on a series of studies, for each industrial group, of the variation in the size of plant. The results were checked against Census published data and refined with the use of employment and payroll data taken from Social Security tabulations, which in some aspects offer more detailed information than the Census. But the most fruitful source of county employment estimates have been chambers of commerce and postmasters, whom we poll annually for industrial data, and the various state employment commissions.

To indicate the value of these special sources, consider the lengths to which the Census Bureau must go to conceal the fact that the Gates Rubber Company of Denver, to cite just one example, has about 5,000 employees, something which is common knowledge to all informed local agencies. The Census Bureau will acknowledge that in the No. 30 classification (rubber) Colorado has one plant with over 2,500 employees, but will not

disclose total rubber employment in either Denver county, the Denver metropolitan area, or even in Colorado itself!

To take other examples illustrating various sources: The Census Bureau acknowledges the existence in McLean county, Illinois, (Bloomington) of five plants in the No. 36 category (electrical machinery) of which only two had over 100 employees in 1954. But the Bloomington Association of Commerce informed us that in 1956 three companies—General Electric, Admiral and Eureka Williams accounted for 3,900 employees. In the same manner the Brevard, North Carolina, postmaster informed us that Olin Mathieson accounted for 1500 employees in category No. 26 (pulp and paper products), and 500 in category No. 28 (chemicals), and that the Transylvania Tanning Company employed 250 workers in No. 31 (leather).

In still another case taken at random, to illustrate another source of data, the Kentucky Department of Security informed us that "the majority of Webster county's current employment classified under the combined heading of Printing, Publishing and Paper, is in the paper industry." Similar examples can be offered in thousands of other cases. No law is violated when a chamber or postmaster reveals data withheld by the Census. Here SALES MANAGEMENT is capitalizing on the prestige and authority built up by the *Survey of Buying Power* over a 27-year period, during which time such local agencies have come to respect the ability of the *Survey* to offer to marketing men a fair representation of the economic importance of local areas.

For reasons of space we have limited the detailed county-by-county data on number of plants and employment to those counties having over 2,000 manufacturing employees in 1956. (See tables starting page 120). However, in the rankings of employment and plants of the 100 leading counties in each of the 20 two-digit industries (page 58), we have used our full set of county cards, so that counties with several hundreds of employees in certain industries may show up on the rankings, but may not have the necessary 2,000 total employees to appear in the county-by-county tables.

Typical Applications

All the data developed at each stage of the inquiry have been transferred to IBM cards and are consequently available for special industrial market analyses.

Industrial suppliers can use these rankings and the data on which they are based to establish sales quotas in precisely the same manner that the *Survey of Buying Power* tables for population, sales, and income are used for consumer marketing problems.

One note of caution must be sounded. Consumer markets are far more stable than industrial markets. It is not uncommon in some industries for employment in an area dominated by a few plants to fall as much as 50 percent or increase by 200 percent within a single year. Consequently, the margin of error that must of necessity be accorded our estimates of industrial potential is far greater than for our regional estimates of population, sales, and income.

Once again, then, we release our

Although the S.I.C. is a reliable guide to data in more than 400 industries, industrial sales and advertising executives often find its definitions misleading or inadequate—or both.

This is due chiefly to the overlapping of manufacturing processes inside individual plants and between industries. A company making several products, for example, may be classified only according to its primary product, with the data for all its products contained in that one classification. Or a specific classification may include several types of products, each representing a separate vertical market.

In the interest of further refining the S.I.C. so that its classification breakdowns will more sharply pinpoint specific industrial markets, SALES MANAGEMENT asked the recipients of its recent questionnaire (see page 34) to list the S.I.C. classifications they found misleading or confusing as well as particular definitions they would like to have clarified.

We told them we plan to correlate all answers to the question for presentation to the Department of Commerce and the Bureau of the Census. SALES MANAGEMENT will serve as a "clearing house" for all criticism and suggestion aimed at improving the S.I.C., and will be happy to include your recommendations in its presentation to the government.

The S.I.C. is widely used and reliable. Our efforts are directed toward refining its breakdowns. In the data presented in this issue, our researchers have made every possible effort within present government definitions to keep the estimates as free from overlapping duplication as possible.

The estimates are soundly based, and represent the only updated industrial market figures of their kind available anywhere. Industrial advertisers and their advertising agencies recognize them as a big step forward in enabling the S.I.C. to function more effectively as a primary industrial marketing tool.

industrial potential data with the invitation to industrial marketing people to give us their reactions and suggestions for improvement. In working on industrial potential data over the past five years, our research department has accumulated considerable material on industrial marketing that may prove useful. Each year new uses for the data come to our attention. For instance, one large railroad found it possible to use the data for a problem that had never before been solved: i.e., to make estimates of the volume of freight originating in each county for major industrial classifications.

The most common application, however, takes the following form. A company making a certain type of industrial lubricant, let us say, may analyze its customers and decide that its market is composed mainly of plants producing chemicals, machinery, electrical machinery and transportation equipment. It may feel that each of those four industries is equally important, so that it will request a county-by-county listing (covering all counties and therefore achieving 100% coverage) of employment in each industry, plus a county total for the four industries. The latter may be expressed as a percentage of the four industry total for the U.S. to indicate the overall relative importance of each county.

Weighting the Industries

As an added refinement, the company may decide to give each of the four industries a different weight, depending on its actual sale to each industry, in which case it will want each county total to reflect these differential weights for each industry. The use of punch cards facilitates such calculations. We have the example of one company producing paper forms for industrial and commercial use which found it possible to determine the relative importance of each of the 27 separate industrial and commercial categories for which we had data on cards. Applying these cards to each county, the company succeeded in establishing dollar potentials for each county, which are the sum of 27 different sub-potentials in each county. Thus the company potential is in theory the sum of 27 times 3070 or 82,890 separate calculations. While this is the most elaborate application of our cards that we know of, the principle can easily be applied to a smaller number of industrial classes.

Precisely because this information had never before been available in this form, it has literally revolutionized the technique of setting sales quotas for industrial products. We know of no better way to illustrate this point than

to cite again an actual case, that of one of the nation's largest manufacturers of a certain kind of equipment used in the apparel industry.

For years, they told us, they had been preparing their area quotas by using local directories listing the names of apparel manufacturers. Here they ran into a common problem: (1) such directories are not uniformly available for all areas, (2) many company names have no real existence, i.e., there is no plant operation associated with the name, (3) there is no way of evaluating the importance of any given name short of an individual research job for each listed company. These difficulties in general have always impeded the job of setting systematic sales quotas for any areas other than the major metropolitan areas (for which Census data were available), not only in this particular industry, but for all other industries.

When the research department of this major supplier of apparel equipment saw our initial estimates of employment in apparel manufacture in 200 leading counties, their first reaction, they told us frankly, was one of scepticism. This vanished completely however, when they transferred the SALES MANAGEMENT data on to maps, coloring each listed county, and compared this map with a similar map prepared from their sales records. The agreement between the two maps was close enough to convince them that here at last was an objective opportunity to test the reasonability of their sales volume in one county as compared with another. Here again, they reported, they found substantial agreement with their own sales experience, but now their interest was centered on areas in which divergences appeared between their sales figures and the SM potentials.

At this point, they got in touch with the SALES MANAGEMENT research department and asked for an opportunity to check into our data at first hand. They explained in effect that they were convinced that our data offered them a chance to revise their sights, but that a thoroughgoing re-alignment would disturb so many sleeping dogs that they would be called upon to defend the new quotas against the most critical kind of scrutiny. We were naturally delighted, for this was precisely the problem we had anticipated. Our data, both published and unpublished, are now being used as the basis of the sales quotas for the products of this industrial supplier.

How to Find 4-Digit Plants

For certain two-digit classifications, such as rubber, leather, lumber and wood products, the further break-

down to three-digit and four-digit categories is not too important since the product differentiation within these classes is not too great. In others however, such as chemicals, carrying the identification to a four-digit level is often necessary since a plant producing, say, plastic materials will have little in common with a plant producing cosmetics, though both are classified under No. 28.

Although the county-by-county figures are limited to two-digit industries, they can be most helpful in pinpointing the counties where your four-digit prospects are located. Suppose, for instance, you are looking for large plants manufacturing heating and plumbing equipment (S.I.C. classification 341) in the state of Indiana. The Census will tell you that in 1954 there were 30 plants in this class in Indiana with over 20 employees, accounting for nearly 5,000 employees. The Census will also tell you that Marion county accounted for about 700 employees in this category. Turning to our county data, we can narrow the inquiry down to about 20 other counties in Indiana that have over 500 employees in category No. 34. From here on you have to rely on industrial directories, and direct communication with the chambers of commerce in these areas, which will turn up such information as the existence of a large American Kitchens Division plant in Fayette county (Connersville), etc.

Industrial marketing people should note that many other applications will be facilitated by the use of the county IBM cards containing all data. Six different complete county series are available, as follows:

Card No. 1—Employment in 1956, all counties, in mining; contract construction; public utilities; wholesale trade; finance, insurance and real estate, and services.

Card No. 2—Employment in 1956, all counties in food; tobacco; textiles; apparel; lumber; furniture; paper; printing; chemical, petroleum and coal.

Card No. 3—Employment in 1956, all counties, in rubber; leather; stone, clay, glass; primary metals; fabricated metals; machinery non-electrical; machinery electrical; transportation, instruments and total manufacturing.

Card No. 4—Number of plants, 1954, all counties corresponding to card No. 2.

Card No. 5—Number of plants, 1954, all counties, corresponding to card No. 3.

Card No. 6—Number of plants, 1954, all counties, by three size classes (under 20 employees, from 20 to 99 employees, over 100 employees) for S.I.C. classes 20 to 39, and total.

How to stand out in a crowd

In any crowd of competitors, one company always stands out. It is the leader. It may not be the biggest, or the oldest. But it is recognized as the *best*. Its product name is usually the accepted synonym for desirable excellence in its field. It is most apt to have a comfortable back-log of orders—most apt to show the most consistent profit.

It is also, usually, a living—and very healthy—testimonial to the effectiveness of an important marketing principle.

That principle is this: In the long run it profits you far more to sell your product on its *value* rather than on its *price*.

Almost everyone will agree with that principle in theory; but many violate it in practice. It is often so easy to pick up quick sales by promoting "special prices" or "deals". And it is so hard to resist the temptation to fight fire with fire when price-cutting competitors are apparently hurting you.

But when you get down and fight the "price" merchandiser on his home grounds, and by his rules, you place yourself in danger of losing much and gaining little. You identify your fine product with his and destroy, in the minds of customers, some of your product's distinctive *value*. Your short term sales gain is apt to be at the cost of the kind of customer respect which creates long term growth.

Perhaps the main reason more manufacturers do not sell on value rather than on price is that selling on value is far more difficult than selling on price. It requires, of course, a product that *has* value—but that is only the beginning.

It also requires the marketing wisdom to know what specific "character" you should create for your product to best set it apart from all others of its kind. And then it requires the creative skill to crystallize that character on paper or on the air waves, and project it into the minds of the right people at the right time.



It requires something else, too—the lonely courage to stand out from the crowd, to tell your own story consistently, year in and year out, regardless of the varying tactics of competition. Perhaps this is the rarest quality of all; it is sometimes called Leadership.

Many of our clients believe as strongly as we do that marketing on the basis of value, rather than price, pays off in long term profits and growth. Together we've proved it, at least to our mutual satisfaction. Forty-one of our clients are leaders in their respective fields,

*Marsteller, Rickard,
Gebhardt and Reed, Inc.*

A D V E R T I S I N G

NEW YORK • CHICAGO • PITTSBURGH

AFFILIATES

PUBLIC RELATIONS • BURSON-MARSTELLER ASSOCIATES, INC.
MARKETING COUNSEL • MARSTELLER RESEARCH, INC.

How We Use The



150 marketing executives tell what they are looking for in basic and supplementary industry and geographic data, how they use it to produce better market plans and programs, what are the virtues and shortcomings of government and publication data.

The complex nature of America's mid-century business was emphasized in the returns to a 10-point questionnaire which the editors sent to selected SALES MANAGEMENT subscribers and members of the National Industrial Advertisers Association.

When asked, "which of the (above) 2-digit census components do you now use in whole or in part—please list by two-digit number?", the 150 respondents whose returns have been tabulated made answers which worked out to an average of 9.4 basic industries.

In other words, the average company selling products, services or supplies to industry deals with companies in roughly half of the score of industrial classifications.

Machinery Except Electrical (closely followed by Fabricated Metals, Transportation Equipment and Electrical Machinery) was the most popular classification. The popularity rankings for all 20 categories are shown in chart on page 32.

Many respondents pointed out that their prospects were even more varied than could be expressed through the 2-digit groupings, that the 2-digit codes were so broad as to be relatively meaningless, that they cheered SALES MANAGEMENT's decision to update on a 4-digit basis annually the dollar value of products shipped and the employment data. One respondent,

obviously a bear for detailed market analysis, says he won't be satisfied until a 6-digit breakdown is available!

In addition to the companies whose marketing executives are quoted directly in this article, the survey respondents are in such diverse industrial fields as Goulds Pumps, Inc.; Electric Storage Battery Co.; General Electric Co.; Emery Advertising Corp.; Dresser Industries; Foote, Cone & Belding; Porter-Cable Co.; Ruberoid Co.; Henry A. Loudon, advertising.

Also The Ballard Co.; O. S. Tyson Co.; Stone Container Corp.; Noyes & Co.; Continental-Diamond Fibre Co.; Cincinnati Time Recorder Co.

And the Crane Co.; the Buchen Co.; Surface Combustion Corp.; Cutler-Hammer Inc.; Black & Decker Mfg. Corp.; Alco Valve Co.; B. F. Goodrich Co. The editors are sorry that space limitations prevent them from thanking all respondents by name.

In their second questions the editors asked: "which of these (2-digit) components would you use when made available on an annual basis with updated estimates from a Census base?"

The average number which would be used jumped from the 9.4 now using to about 10.5, with no substantial changes in the popularity ranking.

Other Than Census Data, What?

The third question was: "What sources other than Census data do you now use?"

Some couple of hundred sources were mentioned by the 150 respondents. The top 5, arranged alphabetically, were:

Dept of Commerce and other government bureaus

Industry association statistics (A.I.S.I., N.E.M.A., A.S.M.M., etc.)

Iron Age "Basic Marketing Data" McGraw-Hill reports (Market Handbook, etc.)

Trade publications data, surveys, reports not precisely specified.

The next 5, also arranged alphabetically:

Dun & Bradstreet
Industrial Marketing
Penton Census of Manufacturers
SALES MANAGEMENT "Survey of Industrial Buying Power" (previous issues when it was a section of the consumer edition.)
Steel market data books

Other mentions went to such sources as F. W. Dodge Co., Hearst Marketing Division, *American Machinist, Printers' Ink, Guide to Marketing, Editor & Publisher Market Guide, Electrical Manufacturing, Rand-McNally*.

Also to *Petroleum Processing, Mill & Factory, Purchasing, Machine Design, Standard Rate & Data Service, Industrial Distribution, Fuel Oil & Fuel Heat, Electrical Merchandising, Econometric Institute, Thomas Register*.

Other sources included commercial building permits data, "own sales control record," state industrial organizations, reports from own field men, state and local employment data, state directories, classified phone books, local chambers of commerce, research departments of newspapers.

Here are some samplings from representative respondents.

Stuart Edgerly, industrial sales manager, Fenwal, Inc., Ashland, Mass.: "SALES MANAGEMENT Survey of Industrial Buying Power, Penton Publication OEM market analysis, and any publications covering specific industries to which we sell, as for example, electrical manufacturing."

G. C. Hiss, secretary, Walter Kidde & Co., Inc., Belleville, N. J.: "County Business Patterns of the Department of Commerce." Thomas C. Young, manager, commercial research dept.,



3 REASONS WHY ADVERTISERS MAKE THE NEW YORK TIMES MAGAZINE ONE OF THE BIG THREE IN CONSUMER LINAGE

First, because it adds strength to any magazine schedule in the big and busy New York market, where most magazines are weak—the strength of The New York Times, New York's biggest advertising medium.

Second, because it carries the influence of the New York market into better-customer homes and big-volume stores all over the country—the influence that makes The New York Times the biggest Sunday advertising medium in the country.

Third, an attractive rate that makes it one of the lowest-cost magazines available.

Why do advertisers make The New York Times Magazine one of the Big Three (with Life and the Saturday Evening Post) in advertising linage? It will pay you to find out.

*Distributed exclusively with The New York Times every week into more than 1,250,000 U. S. homes and stores.
Advertising offices in New York, Boston, Chicago, Detroit,
Los Angeles, Miami, Philadelphia, San Francisco, St. Louis.*

9
questions
advertisers
ask most about
Architectural
magazines

1

1. Q.

Which magazine has most architect subscribers?

A.

Architectural Record with 17,241. (Progressive Architecture has 16,202; Architectural Forum 12,687.)

SOURCE: December 1956 A.B.C.
Publishers' Statements

2. Q.

Which magazine has most engineer subscribers?

A.

Architectural Record with 9,407. (Progressive Architecture has 8,517; Architectural Forum 4,371.)

SOURCE: December 1956 A.B.C.
Publishers' Statements

3. Q.

Which magazine has most staff architect and engineer subscribers in commercial, industrial, and institutional organizations?

A.

Architectural Record with 2,585. (Progressive Architecture has 1,783; Architectural Forum 1,259.)

Based on December 1956 A.B.C. Publishers' Statements: Staff Architects and Engineers in "Commercial, Industrial & Institutional" organizations.

4.Q.

Which magazine do architects
and engineers prefer?

A.

In 95 out of 104 studies SPONSORED BY BUILDING PRODUCT MANUFACTURERS AND ADVERTISING AGENCIES, architects and engineers have voted Architectural Record "preferred." Architectural Record placed first in 27 out of 29 studies in 1955 and 1956.

Summary of 104 studies
available on request

7.Q.

Which magazine offers top
verifiable market coverage?

A.

F. W. Dodge Corporation's Dodge Reports document Architectural Record's coverage of over 85% of the total dollar value of all architect-planned building including 94% of the nonresidential building, 75% of the residential building.

SOURCE: State Checks of Architect Activity

5.Q.

Which magazine publishes
most editorial pages?

A.

Architectural Record. In 1956 Architectural Record published 1,481 editorial pages; Progressive Architecture 1,051; Architectural Forum 1,048.

8.Q.

In which magazine do advertisers advertise most?

A.

In 1956, Architectural Record carried 41% more advertising pages than the second magazine; 68% more than the third magazine. Architectural Record ranked 4th among all monthly magazines in the U.S. in advertising page volume.

SOURCE: Industrial Marketing

6.Q.

Which magazine leads in
quality of editorial content?

A.

Architectural Record has won 36 awards for editorial excellence including 5 out of 6 awards to architectural magazines by the American Institute of Architects.

9.Q.

In which magazine can we
reach architects and engineers
most economically?

A.

In Architectural Record with a cost per page per 1,000 of \$22.52. (Progressive Architecture \$24.27; Architectural Forum \$46.61.)

If there are questions you would like to ask us about Architectural Record, its architect and engineer subscribers or the market it serves, we would welcome the opportunity to answer them. Please phone us or drop us a line.

Architectural Record

"workbook of the active architect and engineer"

119 West 40th Street • New York 18, N.Y. • Oxford 5-3000



MAGAZINES
AND BOOKS:
Architectural Record
College and University
Business
Dodge Books
The Modern Hospital
The Nation's Schools
The Record & Guide

Lukens Steel Co., Coatesville, Pa.: "American Iron & Steel Institute, the metalworking field and all that can be found."

R. D. Marsh, general sales manager, Leland Electric Co., Dayton, O.: "Statistics from media such as *Electrical Manufacturing*, *Iron Age*, *Machine Design*, plus association data." Franklin S. Catlin, manager marketing services and advertising, Magnaflux Corp., Chicago, Ill.: "*Iron Age* basic marketing data, *Steel market data*."

T. K. Sharpless, vice president sales, Technitrol Engineering Co., Philadelphia, Pa.: "RETMA reports, surveys of our own, McGraw-Hill surveys." H. W. Kippers, sales manager, Kearney & Trecker Corp., Milwaukee, Wis.: "Department of Commerce County Business Patterns, various market data books prepared by *American Machinist*, *Steel*, *Iron Age*.

In How Many Industries Do You Operate?

We asked industrial advertising men: "How many different industries are you now active in selling to in any degree?"

This departed from the 2-digit question but the replies, which went on to mention specific industries, were then regrouped by 2-digit classifications.

The results, (not surprising) were similar to the answers on the first question.

More than half replied, as follows:

1 to 10 industries	49%
11 to 20 industries	18
21 to 50 industries	10
51 to 100 industries	8
More than 100 industries	15

A sub-question asked: "during the coming 18 months, how many more industries do you anticipate either entering, or expanding your sales efforts?"

The answers were not conclusive. 44% did not answer, and 20% said "none." The expansion-minded respondents answered:

9%	said "normal expansion in existing industries, but nothing new"
14%	said "one to four"
7%	said "5 to 10"
6%	said "more than 10"

How Do You Supplement Basic Data?

Another question dealt with weighting and was phrased as follows: "Would you (or do you now) supplement basic industry data with weighted factors of your own knowledge and experience to determine budgets, quotas, etc.?"

The answers indicate that "outside" data are seldom enough. 81% answered "yes" to the question, 14% "no", and 5% did not answer.

Here are a baker's dozen which have more general application:

1. "For any industry we take a plant(s) where we know their annual pump purchases, and tying this in with employment or sales at that plant, we get a yardstick for unit employment or sales to measure the potential of any other plant in the same industry."

2. "We follow Dun & Bradstreet reports and also maintain our own growth surveys for all industries in which we are interested."

3. "The ratio of office workers to plant employees is the key for us."

4. "We weight markets in two ways, (a) according to present consumption and (b) according to our estimate of growth prospects for us."

5. "Our problem has been that we sell only through industrial distributors and we haven't been able to trace sales to the ultimate users, but we are now succeeding in getting most of the distributors to cooperate in supplying sales data."

6. "We relate extent of use to per 100 employees and this puts varying importance on specific classifications."

7. "Use basic industry data but

S.I.C. Code No.	Industry	% mentioning
35	Machinery Except Electrical	70
34	Fabricated Metals	67
37	Transportation Equipment	65
36	Electrical Machinery	63
38	Instruments and Related Products	56
33	Primary Metals	55
28	Chemicals & Allied Products	54
39	Miscellaneous Industries	50
26	Paper & Allied Products	46
29	Petroleum & Coal	45
20	Food & Kindred Products	42
30	Rubber Products	40
25	Furniture & Fixtures	36
32	Stone, Clay & Glass Products	36
27	Printing & Publishing	35
22	Textile Mill Products	35
24	Lumber & Products	32
31	Leather Products	27
23	Apparel & Related Products	26
21	Tobacco	26



WHERE WILL YOU FIND TOMORROW'S MARKETS?

As America's economy continues in a period of unprecedented growth, expansion and diversification are of primary interest. New products must be developed and marketed by companies planning to keep pace with this expansion.

Some industries and fields, however, show a far greater growth potential than others. These major

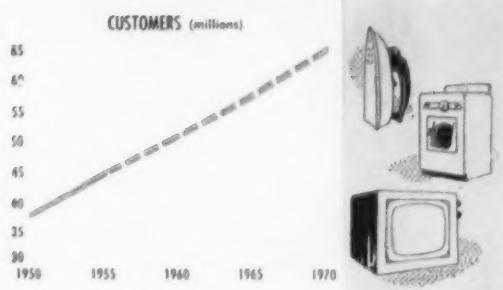
markets are among the 23 primary areas served by McGraw-Hill magazines.

On the following pages, you will find a current appraisal of each of these fields. If you wish more complete market data on any of these industries it can be obtained readily from your McGraw-Hill representative.

LIFT

APPLIANCE-RADIO-TV

... served by ELECTRICAL MERCHANDISING



9 million new wired homes by 1965 are expected to help raise total industry production by 75% above this year's \$9 billion output.

ATOMIC ENERGY

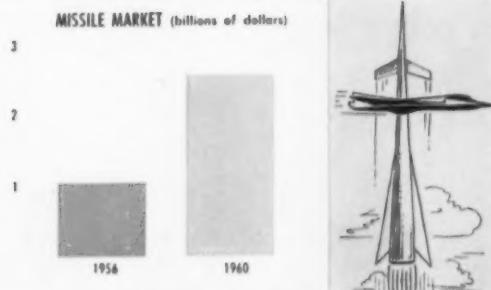
... served by NUCLEONICS



Long dominated by government spending, the picture shows more active industry participation. For example, isotope users will increase 400% by 1966.

AVIATION

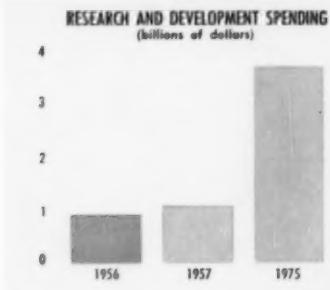
... served by AVIATION WEEK and AIRPORT and BUSINESS FLYING DIRECTORY



Major trend is for the \$1 billion missile market to increase \$2.5 billion while standard markets hold their present \$8.5 billion level.

CHEMICAL PROCESSING

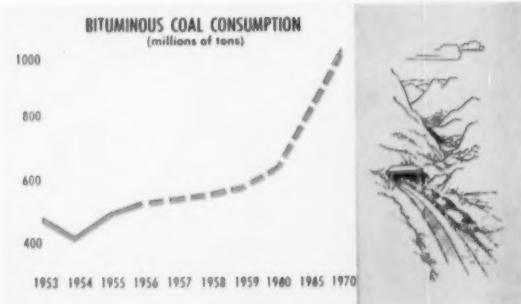
... served by CHEMICAL WEEK and CHEMICAL ENGINEERING



Chemical production is expected to rise 125% by 1970 . . . biggest increase in all of industry . . . with research spending nearly \$3 billion plus.

COAL MINING

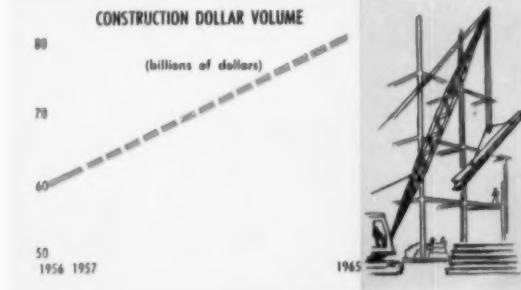
... served by COAL AGE, KEYSTONE COAL BUYERS MANUAL and COAL MINE DIRECTORY



Rising demands for energy should increase output tonnage of this growth industry at least 100% by 1970; modernization and expansion are at high levels.

CONSTRUCTION

... served by CONSTRUCTION METHODS & EQUIPMENT and ENGINEERING NEWS-RECORD



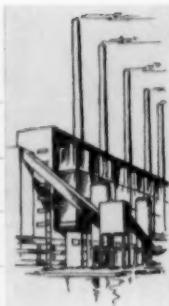
A total of 24% gain is estimated over the next 10 years, with a currently-planned backlog representing 5 years' work at present rate of construction.

POWER

... served by POWER, ELECTRICAL WORLD and ELECTRICAL WEST

POWER FACTS (1950 vs. 1960)

PRODUCTIVITY.....	↑ UP 25%
WORK WEEK.....	↓ DOWN 3.5 HRS.
TOTAL JOBS.....	↑ UP 7½ MILLION



Electrical power production is up 145% since the war, will grow from present levels with help of standard generating methods plus atomic energy.

PRODUCT DESIGN

... served by PRODUCT ENGINEERING

ORIGINAL EQUIPMENT MARKET

	BY 1970
Fabricated Metal Products	UP 25%
Non-Electrical Machinery	UP 35%
Electrical Machinery	UP 70%
Autos, Trucks, Parts	UP 15%
Other Transportation Equipment	UP 225%
Instruments	UP 200%

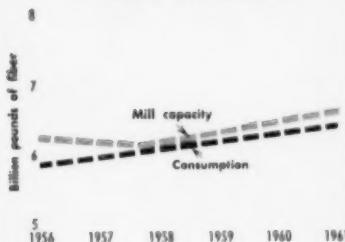


Product design engineering is an important growth factor in the original equipment markets, particularly in instruments and transportation equipment.

TEXTILES

... served by TEXTILE WORLD

CONSUMPTION vs. MILL CAPACITY



Consumption of textiles should reach full mill capacity in 1958 . . . sparking growth in production facilities throughout the industry to keep pace.

TRUCKS and BUSES

... served by FLEET OWNER

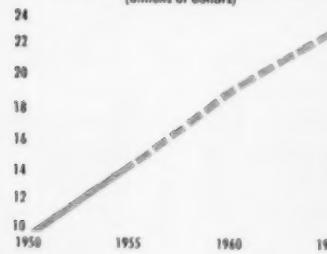
TRUCKS ON ROAD (millions)



75% of total tonnage goods reach market via trucks. Forecasts call for 20 million trucks on the road by 1975, with 2.3 million new trucks produced yearly.

McGRAW-HILL INTERNATIONAL CORPORATION

U.S. EXPORTS TO FOREIGN COUNTRIES (billions of dollars)



THE AMERICAN AUTOMOBILE & EL AUTOMOVIL AMERICANO • CONSTRUCCION • INDUSTRIA
MANAGEMENT DIGEST • THE McGRAW-HILL AMERICAN LETTER • METALWORKING PRODUCTION (London)

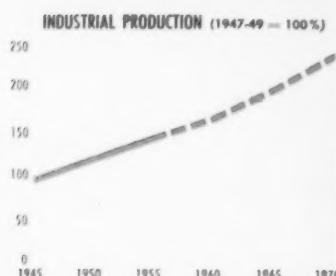
Business and industrial expansion overseas has been climbing steadily, and indications are for this growth to continue. By 1965, total exports should reach \$22.5 billions per year.

McGraw-Hill International Corporation serves this expanding foreign market through 5 business and industrial magazines edited specifically for and sold to foreign nationals. In addition, the British subsidiary of McGraw-Hill publishes its own magazine.

In these six magazines, foreign nationals find the information they need about new techniques, new developments . . . and the products America can supply to meet their needs and those of their own rapidly-growing economy:

DISTRIBUTION - INDUSTRIAL

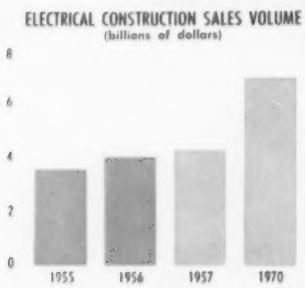
served by INDUSTRIAL DISTRIBUTION and DIRECTORY OF INDUSTRIAL DISTRIBUTORS



Industrial production is expected to double by 1970 . . . and sales by industrial distributors will parallel in both growth and expansion.

ELECTRICAL CONSTRUCTION AND MAINTENANCE

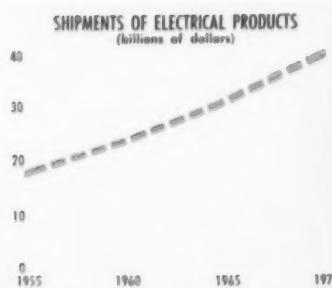
served by ELECTRICAL CONSTRUCTION AND MAINTENANCE



Estimates indicate industry sales will increase roughly 60% by 1970, helped by new construction and need for modernization of present lighting.

ELECTRICAL GOODS

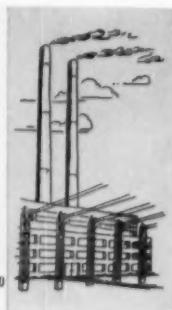
served by ELECTRICAL WHOLESALING and DIRECTORY OF VERIFIED ELECTRICAL WHOLESALE DISTRIBUTORS



Dollar volume in the past 10 years has increased 367% while demand for electrical apparatus is expected to boost production 110% by 1970.

ELECTRIC UTILITIES

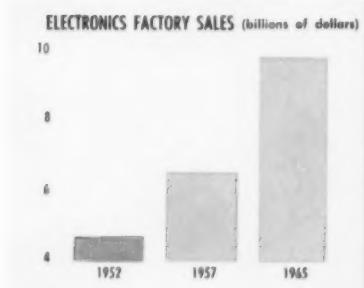
served by ELECTRICAL WORLD, POWER and ELECTRICAL WEST



Utility expansion spending to handle increased residential, industrial and commercial use of electricity should reach \$11.2 billion by 1970.

ELECTRONICS

served by ELECTRONICS



Technical advancements have placed the industry in the first 10 since World War II; forecasts point to continuing expansion to \$9.6 billion by 1965.

FOOD

served by FOOD INDUSTRIES

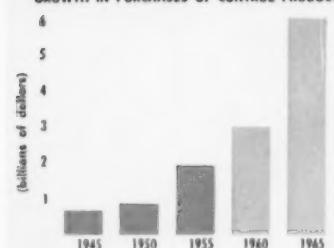


First in number of plants, second in employee total, third in expansion plans, food accounts for \$70 billion sales annually, should reach \$100 billion by 1965.

INSTRUMENTS and CONTROLS

served by CONTROL ENGINEERING

GROWTH IN PURCHASES OF CONTROL PRODUCTS

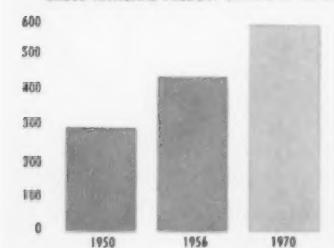


Continuous process analysis, data reduction systems and numerical machine control point to 105% production growth of automatic control systems by 1970.

MANAGEMENT

served by BUSINESS WEEK

GROSS NATIONAL PRODUCT (billions of dollars)

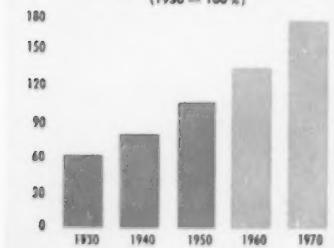


Forecast growth in gross national product to \$550 billion will bring about substantial increase in responsibilities and functions of management by 1965.

MANUFACTURING PLANT OPERATION

served by FACTORY MANAGEMENT and MAINTENANCE

INCREASE IN OUTPUT PER MANHOUR (1950 = 100%)



Fantastic growth of national productivity is due to increasing efficiency of factory operation; estimated output per man-hour will nearly double by 1970.

METAL MINING

served by ENGINEERING and MINING JOURNAL and E. & M. J. METAL and MINERAL MARKETS

U.S. MINERAL REQUIREMENTS (000) omitted

	1956 TONS	1965 TONS
Copper	1,300	+ 600
Lead	1,100	+ 260
Zinc	1,000	+ 150
Aluminum	2,000	+ 2,000
Iron	130,000	+ 10,000

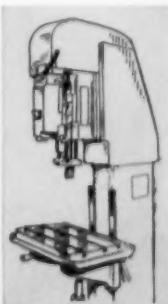
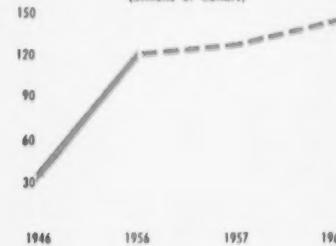


World output of metals and minerals is still climbing, with the U.S. demand alone expected to increase in all major categories year by year.

METALWORKING

served by AMERICAN MACHINIST

METALWORKING DOLLAR VOLUME (billions of dollars)

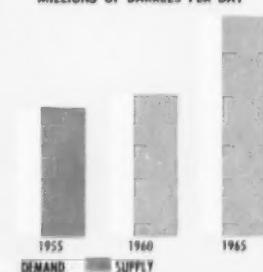


Output has risen 234% since 1946, is expected to increase another 20% by 1960. Industry is already heaviest capital spender among manufacturers.

PETROLEUM

served by PETROLEUM WEEK, PETROLEUM PROCESSING, NATIONAL PETROLEUM NEWS, PLATT'S OILGRAM NEWS and PRICE SERVICES, and OIL PRICE HANDBOOK

MILLIONS OF BARRELS PER DAY



Today's domestic consumption totals 8.5 million barrels per day, is expected to reach 13 million barrels by 1965. Industry expansion will invest \$115 billion.



WHAT MAKES A MAGAZINE A LEADER... IN EDITORIAL CONTENT AND ADVERTISING?

Each of the McGraw-Hill magazines serving business and industry is a leader in its specific field.

They lead in editorial impact, because each of the 485 full-time McGraw-Hill editors knows intimately the field served by the publication *and* the day-to-day problems of its readers. Editorial leadership springs from the unrivalled resources of McGraw-Hill as well . . . the unique cross-

connecting of editorial staffs and a world-wide news bureau network.

Because of this, more than a million subscriptions to McGraw-Hill magazines are bought by men in business and industry each year. Their interest carries over to the advertising pages as well . . . telling the readers "what with" just as editorial content tells them "how to."

McGRAW-HILL PUBLICATIONS

McGraw-Hill Publishing Company, Incorporated
330 West 42nd Street, New York 36, New York



% Using	TYPE OF APPLICATION
95	Determining industry concentration and/or potential.
72	Setting up (aligning, delineating) distributorships and/or sales territories.
63	Setting sales (distributors or salesmen) quotas.
62	As an aid in determining advertising budgets. <i>(Editor's note: no question was asked about allocating monies to specific media types or individual mediums.)</i>
37	Setting sales budgets.
19	Determining plant distribution and assembly needs and locations.

temper it by reports from our field sales organization."

8. "Air conditioning, for example, will have a climate weight, while all fuel chimneys would have a weight for non-gas areas."

9. "We establish annual units of sales per employee from reports, eventually arriving at an average which we can apply to each trade area for replacement (or distributor) sales."

10. "Each 2-digit industry is weighted as a percentage of our sales."

11. "Value-added statistics."

12. "Dollar sales per worker, which we hope to develop from your 4-digit up-dated sales and employment figures."

13. Donald R. Herzog, manager of marketing research, Aro Equipment Corp., Bryan, Ohio, sums up the difference between the scientific approach and by-guess-by-gosh method in these words, "(We) contemplate keeping more accurate and complete sales records for each customer, classifying them into 4-digit S.I.C. product groups, and assigning weights based upon percentage of the total sales. Currently the weighting is done arbitrarily, relying on the judgment and experience of our executives."

And When You're Through, What Do You Gain?

The fifth question dealt with the uses, the end results of market and media studies based upon S.I.C. classifications.

Is it worth while? Some sales executives are scared away by the vague fear of "more paper work," but one respondent who has had a long and a successful experience with S.I.C. use, answers the doubters in these words, "For a manufacturer who has

not been operating his sales program within the S.I.C. structure, the prospect of setting up the necessary mechanics to do so is often an overwhelming one that leads to discarding the whole idea—and to a continued fumbling in the dark.

"On the other hand, if that manufacturer will just take the time and patience to set up his own operation to utilize the S.I.C. data as it becomes available (through the government and through SALES MANAGEMENT), he can certainly set up a smoother and more effective marketing program in the long run. I've seen it work, and I know it to be true."

Respondents were offered six possible uses, with places for checkmarks, and write-in blank lines for other uses. (See box above for most frequent applications.)

The Aeroquip Corp., Jackson, Mich., says J. R. Roberts, advertising manager, uses S.I.C. data to establish potentials and levels of performance for distributors in each trade area, and "we are then able to upgrade our distributors." The company also uses the data to allocate advertising money to specific markets.

In one of the divisions of Minnesota Mining & Mfg. Co. the data aren't used in setting advertising budgets, but they play an important part in distributing the advertising budget.

J. E. Konkle, advertising manager of the Exact Weight Scale Co., Columbus, Ohio, points out that S.I.C. data are "an aid in selecting trade journals to reach vertical industrial prospects."

Several stress the evaluation of salesmen's work. Are they meeting the potentials which can be spotlighted by S.I.C. data? At the Homestead Valve Co., Coraopolis, Pa., "We use for analyzing with individual sales-

men their inter-territory problems."

R. A. Young, sales promotion manager, Leland Electric Co., Dayton, Ohio, expects "soon to compare and examine relation of S.I.C. circulation of media to potentials of market."

Other uses volunteered by respondents include: (1) concentrated promotion programs by markets, (2) classifying of direct mail Addressograph plates, (3) working out *testings* of plans and campaigns, (4) determining production schedules on various models, (5) determining best markets for brand-new products, (6) measuring geographic shifts and trends, (7) determining whether the proposed new product should be taken off the drawing board and put into production.

What's Missing, That You'd Like to Have?

The sixth question was worded: "*In addition to these planned features (in this July 10 issue) by SALES MANAGEMENT, what further industrial research data on a current up-dated basis would you like to see developed—(a) by the Federal government, (b) by private industry, including publications?"*

Here again, many of the responses emphasized the needs of a single industry or a segment of one. Among those of a broader and more general interest which apply to what the government should do are:

1. More finely-described and limited classifications, although respondents realize the problem centered around the "no disclosure" rule.

2. More current figures on gross sales by industries, and a more specific breakdown of same.

3. "County Business Patterns" tabulated by 4-digit S.I.C. numbers.

4. Housing data by size of house, instead of "dwelling unit."

5. "As much as possible on a regional and county basis."

6. Tabulation of "value added" by industry groups; then broken down by state and county.

7. "Breakdown to show for a particular industry what it buys, where and how much."

8. "Volume consumed in a market either by dollars, units or pounds."

9. Better method of classifying multiple manufacturing operations, so that not everything goes into the "principal" item made in the plant.

10. *Faster-faster-faster.* "Government data usually too late to be of any real value."

11. Better analysis of the distribution of manufacturers' sales through various channels of distribution.

12. County data on 4-digit basis.

13. "New construction" by S.I.C. classes of manufacturers.

14. A biennial industrial census, with less time lag between field work and release date.

15. Replace "Metropolitan Areas" with a set of trading areas that cover 100% of continental U.S.A.

16. Wilbur Mayer, sales manager, The Louden Machinery Co., Fairfield, Iowa, wants the Government to issue "some sort of forecast on new plant and equipment expenditures at least by state, preferably for Metropolitan Area or county. We sell capital goods, and a forecast would be better than figures based upon the past."

17. More detailed breakdowns of government purchases. "This is the great unknown market."

18. "With the pressure for economy, I wouldn't impose any more burdens on Washington."

What They Want From Private Industry

Among the requests which are of multi-industry interest and value are these:

1. A basis for measuring industrial selling costs.

2. 4-digit rankings of the 100 leading counties in the 20 manufacturing categories.

3. A SALES MANAGEMENT Buying Power Index percentage by marketing areas and states.

4. Special studies of potentials of newer industries such as LPG equipment.

5. Editors should do a better and faster job of reporting on newly-published government statistics.

6. "Uniform auditing of all business papers, regardless of type of circulation and how secured."

7. Simplify government data.

8. More county data and in more detail.

9. "A county-by-county Buying Power Index, like yours, for each 2-digit classification."

10. "Profiles" of the major industrial areas.

And from Government

Respondents were asked to indicate the S.I.C. classifications where the government delineation was "particularly confusing, overlapping or misleading," and where they would like to see further efforts on clarification or reclassification.

The responses, naturally, fall roughly into the "degree of use" pattern developed by the first question, but not precisely so. This summary

shows for each classification listed the per cent of respondents finding the government delineation unsatisfactory.

%	S.I.C. Classification
19	Machinery Except Electrical
17	Fabricated metals
16	Electrical machinery
14	Chemical & allied products
12	Primary metals
11	Transportation equipment

Fewer than 5% expressed dissatisfaction with the other classifications, but among the comments, these seem worthy of consideration in Washington:

1. Both electronics and atomics are unsatisfactorily covered.

2. "Overhaul and service groups."

3. "Great confusion in all categories when one tries to classify the 'big' corporations producing a variety of products, not necessarily related."

4. Petroleum and coal should be separated. No classification for gas distribution.

5. Need for more cross-referencing and cross-collating.

6. Should be new listings for new industries such as nuclear power, guided missiles, rockets, etc.

7. "Even the 4-digit categories are too broad. There is too much variation in our market *within* each classification."

8. "I think all S.I.C. classifications offer some elements of confusion. I suggest that all manufacturing data should be on same basis as Penton presents their metal-working data."

9. But government classifications, confusing as they are, are less confusing than some publications handling of same. (Editor's note: after he studies this issue, we hope he will give us a "not guilty" vote.)

10. "This would take pages, so I won't even start."

Publishers Ought to Relate Circulation to S.I.C."

The concluding question may not be a popular one with all publishers of industrial magazines.

We asked: "Would you like to see publications in the industrial and service fields (a) provide more detail or supplemental data along these (S.I.C.) lines on the readers they serve and (b) base their sales presentations, at least in part, more along these lines so as to fit into your sales objectives and (c) please estimate how many publishers of all the fields you now cover do this at least in part?"

In answer to the first part—would industrial marketing executives like more detail or supplemental data,—the answer was emphatic:

Yes, said 65%

No, said 2%

No answer 33%

Would they like these publishers to base their presentations, at least in part, along S.I.C. lines?

Yes, said 70%

No, said 1%

No answer 29%

How are the publishers doing along this line?

44% said "0 to 25% do it"

25% said "26 to 50%"

10% said "51 to 75%"

2% said "76 to 100%"

19% did not answer

Some publishers, undoubtedly, are unwilling to classify their subscribers along S.I.C. lines, but very likely the majority who fail to comply with the wishes of their prospects and advertisers are sorely puzzled by the problem(s) presented.

Publisher's Problem More Difficult

As businesses become more complex, as companies diversify either by starting new lines or adding through acquisitions and mergers, the problem of the publisher becomes more difficult. Here is a company in many fields of manufacturing, and a home office executive is a subscriber. To be more specific, let's take the case of General Tire & Rubber Co., and Larry McQueen, vice president in charge of sales. If SALES MANAGEMENT were to break its circulation down to S.I.C. categories, subscriber McQueen should be included in No. 30, Rubber Products. But if we stopped there, we would be short-changing ourselves. General is in the guided missile business, it's in textile mill products, plastics, artificial leather, movies, radio, television, sporting goods—and a host of others. Properly classified, his one subscription (and there are others like him at General's home office) would be multiplied several times, and SALES MANAGEMENT's 24,000 subscribers would seem to be well over 100,000. Many publishers of "horizontal" magazines share this difficulty.

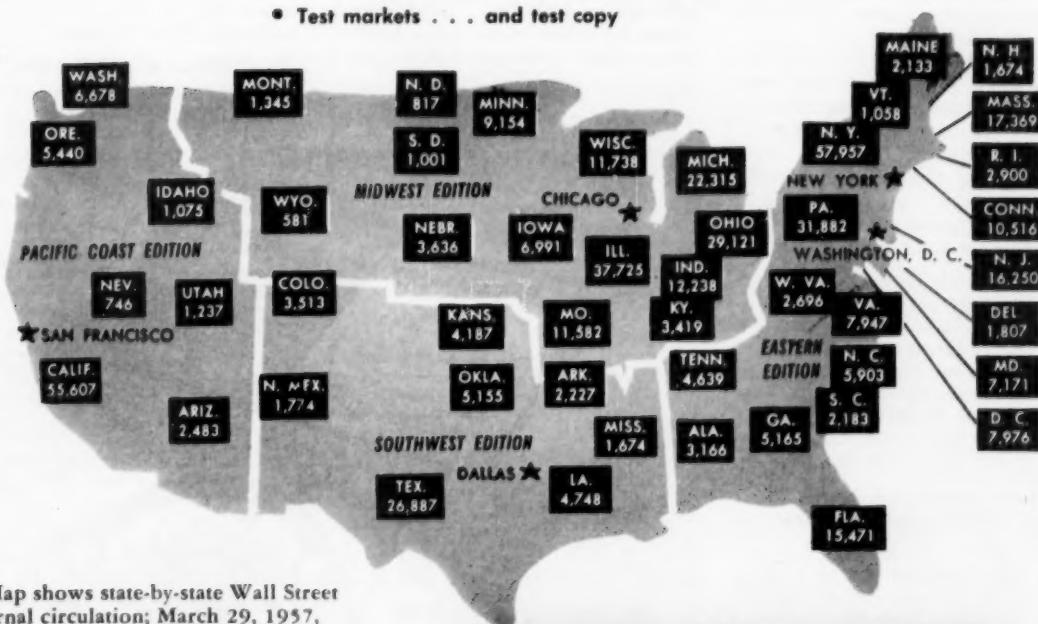
It's a difficult problem, growing more difficult as business becomes more complex, and advertisers should be conscious of the publisher's problem in trying to keep up with the demand for S.I.C. data and at the same time delivering a report which doesn't look padded.

Of all national business media
**Only The National Business Daily
 gives you
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The Journal publishes four regional editions: Eastern, Midwest, Southwest and Pacific Coast. All editions are identical in national news content. Each also carries regional news of business. You can buy one, any combination, or all four—National, according to your business strategy.

You can . . .

- Concentrate on one or more areas
- Time messages to regional or seasonal buying habits
- List local dealers, etc.—area by area
- Make important last minute copy changes
- Test markets . . . and test copy



Map shows state-by-state Wall Street Journal circulation; March 29, 1957, the four areas covered by editions, and the five printing headquarters—starred. National circulation (including foreign): 488,156; comprised of: Eastern Edition: 210,729; Midwest Edition: 155,247; Southwest Edition: 48,522; Pacific Coast Edition: 73,658.

THE WALL STREET JOURNAL

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NEW YORK, 44 Broad St. and WASHINGTON, 1015 14th St., N.W. • CHICAGO, 711 W. Monroe St.
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Here's How You Can Make Your Sales Program Produce Added Volume at No Added Cost!

If product development and production are making more progress than selling—look out! There's trouble ahead, and it could be for you!

Alert, aggressive sales and advertising men have found a new, inexpensive, sure-fire sales tool—the slide-chart! This new device performs important sales functions—actually gives you more sales without more salesmen!

By putting product facts at the fingertips of salesmen, prospects and users, a Perrygraf Slide-Chart can do all this for your company:

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Present your sales story graphically and clearly—what your product does, how it works. Make every salesman an active demonstrator.

Make expert salesmen out of order-takers—your own sales force, jobbers' salesmen, retail sales people. Salesmen give prompt, accurate answers to questions...inspire confidence...often close sales before competition can respond to inquiry.

Keep your product sold, by showing customers how to use product cor-

rectly and get maximum value and satisfaction.

This is true *automation in selling*—producing larger sales volume at lower cost, in every area and every industry where you sell.

What about Design?

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To be most effective, a slide-chart must be simple and easy to use. Manufacturing craftsmanship must be accurate.

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Plymouth
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Triplett Electrical Instrument
Hercules Powder Co.
Verson All Steel Press Co.
Axelson Mfg. Co.
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Harnischfeger Corp.
Belden Mfg. Co.
Jos. Schlitz Brewing Co.
Worthington Corp.
Vickers Incorporated
Minnesota Mining & Mfg. Co.
A. O. Smith Corp.
Minneapolis-Honeywell Regulator Co.
Railway Express Agency
Swift & Company
Cooper Tire & Rubber
Bryant Mfg. Co.
L. A. Young Spring & Wire Corp.
Sheffield Steel
Fairfield Engineering Co.
Carr, Adams & Collier Co.
Air-Marine Motors, Inc.
American National Ins. Co.
Oxi Corp.
The O. A. Sutton Corp.
Oceanic Steamship Co.
Moorman Mfg. Co.
Olin Film Division
Lear, Inc.
National Malleable & Steel Castings Co.
Wendt Sons Co.
Federal Pacific Elec. Co.
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Silvray Lighting, Inc.
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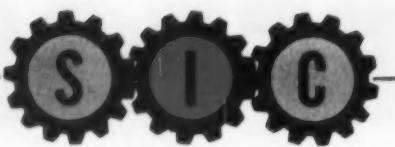
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Sales Offices in Principal Cities

The



How It Can Help You to Achieve More Effective Industrial Marketing

In order to assist sales and advertising managers in selling their products and services to an industrial market, SALES MANAGEMENT has published *The Survey of Industrial Buying Power*. This survey is based on the Standard Industrial Classification, a system widely used by government and industry, including the census of manufactures, and commonly known as the S.I.C.

Information based on the S.I.C. can help increase the sales of an established product and determine the market for a new one. By using the S.I.C., one can get the answers to such questions as:

1. What is the market for a product?
2. How big is it?
3. Where is it located?
4. What are the exact type of plants that are prospective customers?
5. What is the market potential by areas?
6. What are the best trade channels?
7. Are the territories established for the most effective sales coverage?
8. How many salesmen are needed in each territory?
9. Which advertising media should be selected for maximum market coverage?
10. What is the size of the market for contemplated new products?
11. What specifications does the market call for in this new product?
12. What is the best way to locate prospects and avoid wasted sales calls?

The chart on page 40 shows graphically the effects of a sales management assistance program based on S.I.C. data. It shows the share of the market a company achieved for each of its two industrial products during a 5-year span. During the first three years, each product's share declined from approximately twenty-three out of every hundred items sold by the whole industry to fifteen or sixteen. At the end of the third year, the adver-

Information based on the S.I.C. can unearth a number of facts you need to know about your market—such as size, location, potentials by areas, size of your sales staff, how to find prospects and avoid waste sales calls, media coverage required . . .

tising appropriation for each of these products was considerably increased. A leveling off period ensued. At the end of the fourth year, an integrated marketing program based on the S.I.C. was initiated for Product A. The company continued to market Product B in the traditional manner. Within twelve months, Product A regained the high position it had held three years previously, while Product B continued to decline. You will note that the increase in Product A's share of the market was greater in areas sold through distributors than in areas sold directly by the company. This will be commented on later in the section on locating sales prospects.

What was this integrated marketing program based on the S.I.C. which led to the phenomenal increase in Product A's share of industry sales? Throughout this article we shall describe the different aspects of this integrated marketing program as one example of the ways in which a company can benefit from the use of S.I.C. data.

To understand why we should use the S.I.C. in marketing our industrial products, we must examine the motivations of the industrial buyer. He buys things that will help him to solve his production, distribution, control, or development problems. The textile firm buys automatic looms to solve a production problem, the petroleum company oil suction and discharge hoses to solve a distribution problem. Chesterfield bought Accu-Ray to solve a control (and perhaps an advertising) problem.

Your industrial market is made up of manufacturing plants or business concerns whose problems can be solved through your product or service, and who buy it as the best solution to their problems.

If you have some way of categorizing the problems of all industrial plants into those that can or cannot be solved through the use of your product, you will know not only what plants are in your market but the exact problem each one faces, and you can tailor your marketing approach accordingly.

The industrial buyer's problems stem from the product manufactured or the operations performed. Therefore, a system for classifying industrial plants by the product produced or operations performed is a big step forward in categorizing them according to their problems and in finally determining whether they are potential customers and how best to sell them.

The S.I.C. system is based upon the product produced or the operations performed; therefore, if you know the S.I.C. number of a manufacturing plant, you have a good clue to the problems it faces.

By

NATHANIEL R. KIDDER

*President, Kidder and Company,
Cambridge, Mass.*

and

FRANCIS E. HUMMEL

*Manager of Marketing and
Sales Promotion
The Bassick Company,
Bridgeport, Conn.*

AVIATION WEEK

A McGRAW-HILL PUBLICATION

330 WEST 42nd ST.
NEW YORK 36, N.Y.



HOW MANY SALES CALLS ON AVIATION'S ENGINEERING-MANAGEMENT MEN ARE YOU MAKING?

Aviation Industry Will Gross \$11 Billion in
1957*

- \$6.7 billion for military aircraft, engines and related equipment
- \$2 billion for guided missiles and related equipment
- \$1 billion for military and civil ground based avionic equipment
- \$1.8 billion in airline revenues

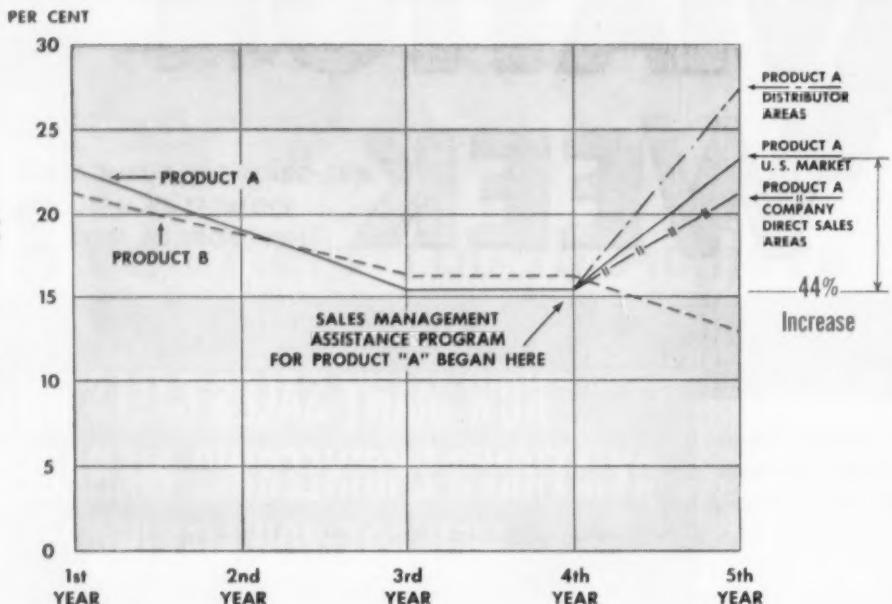
In addition, the industry will get about a half billion in military research and development work and about \$400 million for new plant facilities.

Gain additional sales effort in your Aviation market with printed sales calls in Aviation's No. 1 technical journal. AVIATION WEEK carries your sales message to Aviation's largest and most influential engineering-management-military audience...over 66,186** \$6.00 paid subscribers.

Contact your district AVIATION WEEK sales representative who is ready to aid you with additional Aviation marketing and media information.

* Source: AVIATION WEEK 24th Annual Inventory of Airpower Edition
** Current Print Order 70,320
December 31, 1956 ABC 62,970

Increase in Share of the Market with a Sales Management Assistance Program



Basic Marketing Analysis

Since manufacturers in the same S.I.C. make the same kind of product and have the same or similar problems, you must determine the various industries (usually 4-digit S.I.C.) that your market encompasses. It can be done by three basic complementary methods:

1. Sales analysis. In the case of an established product, you must determine the 4-digit S.I.C. number of each plant that's a customer for the product by analyzing past sales records.

2. Judgment. Have someone thoroughly familiar with the market for the product go through the S.I.C. manual and check off the 4-digit classifications which he believes fall into the market.

3. Solicit inquiries. This method is particularly applicable to a new product or one whose present customers probably do not represent all the S.I.C. groups in the potential market. Inquiries can be solicited through business publications or a widespread survey. Plants responding can be classified on a four-digit S.I.C. basis.

For example, with Product A in Chart I both sales analysis and judgment were used to determine the S.I.C. market. Sales records of the previous three years were analyzed and the 4-digit S.I.C. number of each plant purchasing Product A was determined. In addition, two different experts on the market for Product A went through the Standard Industrial Classification Manual and checked off a list of industries which they believe

should have a need for the product.

It should be noted that the S.I.C., even on a 4-digit basis, is, unfortunately, not a fine enough classification to allow one to assume that all plants in the same S.I.C. have identically the same problems. Through market research techniques you can determine the percentage of plants in each S.I.C. with problems solvable through the use of your product. Once these percentages are computed, they can be applied to Census or survey data such as the *Survey of Industrial Buying Power* to determine the actual number of plants in each S.I.C. that should be potential customers.

For instance, sales analysis indicated that Product A had been sold to some plants in S.I.C. 3142, House Slippers. A broad survey of that industry revealed that 31% of all U.S. plants in 3142 have production problems calling for the use of Product A. However, this 31% represents only 3% of the total plants in the country with a need for Product A. The 31% is the S.I.C. Percentage for Product A in industry 3142. The 3% is the S.I.C. Weight for Product A.

The S.I.C. does not distinguish between plants that manufacture their own component parts and those that assemble parts made elsewhere. For example, immediately after World War II, the Philco Corporation were purely designers and assemblers of their table model radios. They bought all the component parts from outside suppliers, and were therefore within the market of firms manufacturing

and selling vacuum tubes, while RCA, which made its own tubes, was not.

Once S.I.C. percentages and weights are known, they can be effectively used by sales management, advertising, and product development in the marketing of industrial goods.

Effective Use of S.I.C. in Marketing Management

The primary job of marketing management is to get the right product to the right customer at the right time at the right price and with the right information to make a sale. This calls for the coordinated efforts of product development, advertising, sales management, and marketing research.

Product development is responsible for coming up with the better mouse-trap, advertising for letting the world know you have the better mouse-trap, sales management for producing orders for the mouse-trap, and marketing research for providing information which will assist product development, advertising and sales in carrying out their functions. The S.I.C. is an invaluable tool in obtaining this information, interpreting it, and putting it into action.

Product Development

A year and a half ago the engineering department of the American Dynamics Corporation came up with a radically new type of industrial pump called the Hykinator. It has a completely closed system, without packing glands or seals of any sort, so that cor-

rosion or obnoxious material cannot leak out; and it provides electrical remote control of pressure and flow without the use of motors, gears, valves, etc.

The problem was to discover if there was enough market potential to warrant a large investment by the corporation. While the Hykinator has many unusual features, the industrial buyer never buys unusual features *per se*, but is interested in them if they offer a better solution to some of his production or control problems.

The first step in the market investigation was to have several authorities on fluid-moving and on the pump market go through the S.I.C. manual and pick out the 4-digit industries which could conceivably have fluid-moving problems that could be solved by the Hykinator.

Next, information was solicited from every manufacturing plant with 100 or more production workers in each one of the 4-digit S.I.C. categories selected. Did the plant have fluid-handling problems and, if so, what were these problems? The questions covered details about the fluids, their alkalinity or acidity, their viscosity, pressure and flow requirements. Also the name and title of the plant

official primarily concerned with specifying and purchasing pumps. In each case, this individual was asked if he had any "gripes" about his present pumps, and any suggestions for improvements. Each plant was also asked about the number of pumps purchased annually and the cost per pump.

With this wealth of information the corporation was soon able to decide that the market for the Hykinator warranted considerable investment. The information also provided engineering with specifications that would help Hykinators meet the greatest market demand. It also indicated the best industries for the initial marketing push.

Product development can use the S.I.C. to determine whether or not there is a large enough market for a new product and, if there is, engineering can use the S.I.C. to determine product specifications for the market.

Advertising

Once product development has engineered the better mouse trap, it is up to advertising to let the world know you have the better mouse-trap. The main job of industrial advertising is to get the advertising message into prospect plants and to the right men.

The S.I.C. can be used to single out these plants and provides clues as to how many of the plants are reached by various advertising media. Also, advertising, working closely with sales analysis, can use the S.I.C. to determine the problems at which the advertising copy should be aimed.

An analysis of how the S.I.C. weights and percentages of your company's products can be used to select business magazines for industrial advertising is presented in detail in the Kidder article, "The Cost Effectiveness Approach to Industrial Space Buying," in the April, 1955, *Journal of Marketing*.

In broad outline, advertising and marketing research obtained from each magazine a statement of its circulation according to the number of plants reached in each four-digit S.I.C. They then compared their S.I.C. percentages in weights with those of the magazines, and gave the highest rating to the magazine with the most favorable comparison. The crucial determinant is the cost per plant of getting your message into the prospect plants, although of course strong consideration must also be given to editorial content, impact analysis, inquiry analysis, leadership and similar factors.

The S.I.C.—What It Is

S.I.C. stands for the Standard Industrial Classification, a numerical system set up by the Federal Government to classify different segments of industry by products.

It is presented in great detail in: Standard Industrial Classification Manual, Volume I, "Manufacturing Industries," Superintendent of Documents, United States Government Printing Office, \$2.25.

An industry can be classified on either a 2-, 3-, or 4-digit basis. The more digits the finer the classification. Examples of 2-digit classifications are: Food and Kindred Products,

20; Tobacco Manufactures, 21; Primary Metal Industries, 33, etc. As the table below indicates, there are broad categories (from 19 to 39) covering all manufacturing industries. Each of them is refined into 3- and 4-digit categories.

Let us examine a particular 2-digit category. 20 is Food and Kindred Products. Within it you find 3-digit groups, such as 201, Meat Products; 202, Dairy Products; 205, Bakery Products, etc. The 3-digit classifications are further refined into 4-digit groups. Dairy products, 202, for example, breaks down into 2021, Creamery Butter; 2022, Natural Cheese; 2023, Condensed and Evaporated Milk.

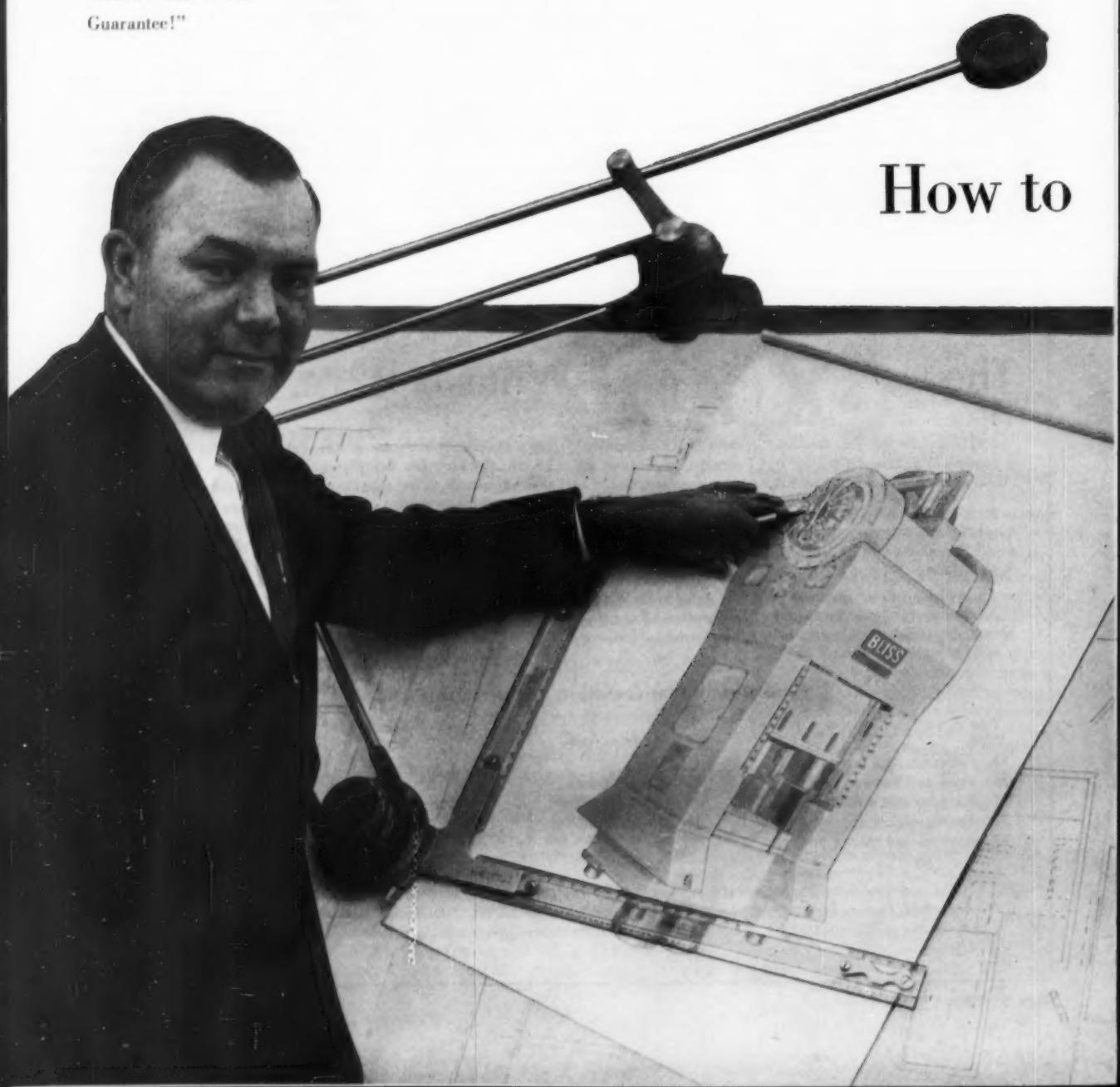
Examples of the Standard Industrial Classification

Two Digit	Title	Three Digit	Title	Four Digit	Title
19	Ordnance and accessories				
20	Food and kindred products	201	Meat products		
21	Tobacco manufactures	202	Dairy products		
22	Textile mill products	205	Bakery products		
23	Apparel and related products			2021	Creamery butter
				2022	Natural cheese
				2023	Condensed and evaporated milk

The S.I.C. used by: Sales Management's Annual Survey of Industrial Buying Power . . . Dun & Bradstreet . . . McGraw-Hill's Industrial Market Planning Work Book . . . The Iron Age's Market Data Books . . . Steel's Census of Metalworking . . . The Census of Manufactures . . . and other groups throughout Government and private industry.

JAMES WINGARD heads up press engineering at E. W. Bliss Company's Canton and Toledo, Ohio, and Hastings, Michigan, plants. He carries forward a century of pressed metal tradition, exemplified by the motto of this largest manufacturer of metalforming machinery: "Bliss Is More Than a Name—It's a Guarantee!"

How to



QQ We are constantly seeking the information needed before we can select and specify the thousands of parts, components and materials which join to make up a new press design. Such information logically comes first from manufacturers' catalogs.

"How manufacturers supply their catalogs to us is, however, of great importance in terms of their usefulness, easy maintenance, and immediate availability. Manufacturers can save us countless hours by including their catalogs in Sweet's Product Design File, instead of challenging our ingenuity to locate and obtain them when we need them most. **QQ**

James K. Wingard Director of Press Engineering
E. W. Bliss Company
Canton, Ohio

make buying easier for engineers

Design engineers agree with you, Mr. Wingard. Time and again they express their preference for a system that pre-files, classifies, and indexes manufacturers' catalogs in bound collections for annual distribution. Such a system alone solves the universal problems created by attempting to establish, index and maintain files of loose, individually distributed catalogs.

A Sweet's representative will be glad to explain how your catalog—pre-filed, classified, indexed, bound and distributed in the Sweet's Files which serve your markets—will sharply increase the order/call ratios of your salesmen—by making it easier for engineers to consider your products, and invite your salesmen to bid for the business, whenever a buying need arises.



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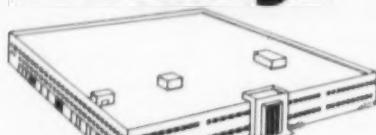
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119 West 40th Street, New York 18.

Sweet's designs, produces, and distributes manufacturers' catalogs in the following markets: Product Design (Product Design File), Plant Engineering (Plant Engineering File), Metalworking Production (Machine Tool Catalogs), and Construction (Architectural File, Light Construction File, Industrial Construction File).

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Largest circulation 52,000

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Lowest cost per thousand . . . just \$6.15

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With Modern Machine Shop's massive circulation, you get the most complete coverage of all metalworking plants—large, medium and small—plus deep penetration of the larger plants. Its good, big circulation is scientifically designed to do a thorough job in America's biggest industry!

For results you can see, put your money where your market is . . . in

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431 Main Street, Cincinnati 2, Ohio

Also publishers of Products Finishing and Products Finishing Directory

NBF

BPA

With direct mailing lists the problem is much simpler since many mailing list houses classify their lists according to the 4-digit S.I.C. You select for your purpose those S.I.C.s. with both the highest percentages and heaviest weights.

Bryant Chucking Grinder Company's program for internal grinding machines is a pertinent example of the use of S.I.C. in industrial advertising. In determining the advertising program, the S.I.C. system was used extensively. Marketing research helped map the ground plan for the advertising campaign by indicating that the market for internal grinding machines was heavily concentrated in three 4-digit S.I.C.s. Examples of problems solved through the use of the machine, furnished by sales analysis for use in the advertising copy, were selected from the three S.I.C. industries. Magazines offering the best coverage of these three industries were chosen. Finally, the message was carried by direct mail to plants in the three industries.

In the case of Product A, several trade magazines were compared for market coverage among selected S.I.C.s. The cost per plant of reaching the market for Product A was found to vary from less than a dollar for some magazines to over eleven dollars for others. The higher-cost magazines were eliminated from the advertising schedule while three of the lower-cost ones were added.

Primary Job of Sales Management

The primary job of sales management is to get the salesmen to the right place at the right time with the right information to make a sale. This involves an area of decision including:

1. The location and organization of sales territories.
2. The trade channel to be used in each territory.
3. The efficient location of sales prospects.
4. The measurement of sales effectiveness.

1. Location and Organization of Sales Territories. A district sales office should be located in a large concentration of plants that are prospects for your product. Exact delineation of the sales territories and determination of the number of salesmen depend on several factors, among them being market potential by areas, number and frequency of calls to be made, transportation, topography. The S.I.C. system can be used to determine market potentials by areas and number and frequency of calls.

The S.I.C. can also be used to fix the size and delineate sales territories. Take a county outline map and for

each county find the number of plants in each 4-digit S.I.C. in your market. When these findings are plotted on the map, several areas of high market concentration will appear. Thus, for almost any type of industrial product, Chicago, Cleveland and Detroit, as well as other cities, will appear as centers of market concentration.

Area market potential figures are most helpful in determining the location and organization of sales territories. By area market potential we mean the total amount of a product any given market can absorb expressed in absolute terms (dollars or units) or as a proportion of the total market. There are different ways of calculating such area market potential indexes. One common method is to develop, an index based on the buying power of each industrial area in terms of the area's industries in your market. Once you have arrived at your S.I.C. weights and percentages, you can apply them to Census or survey data, such as the *Survey of Industrial Buying Power*, to discover quickly the percent of your total market in a particular area.

The Bryant Chucking Grinder Co. method of determining area market potentials and sales territories is described in the Hummel article, "Market Potentials in the Machine Tool Industry," in the July 1954 *Journal of Marketing*.

The size of the sales organization for each territory is based primarily on the number of calls that have to be made. One metal working firm, for example, first classified each industry using its product into one of three groups: (1) those the salesmen should call on monthly, (2) those bi-monthly, (3) those bi-annually. Then each industrial area was analyzed by S.I.C. and size of plant and classified as above. In this way, the number of customers in each area of the country and the required frequency of sales calls were established. By dividing the number of calls a salesman can make into the number of calls that have to be made, the number of men needed to cover a given territory was determined.

2. Trade Channels. The basic policy decision concerning the selection of the correct trade channels—whether for direct sales or distributor or agent—can be formulated only after careful analysis of many factors, such as the nature of the product, the market, the competition and the company organization. The uses of S.I.C. data concerning the market (its size, location, type of plant, buying habits) can be most helpful in shaping policy and establishing correct trade channels.

For example, market potential figures for each state and industrial area

in the nation show that over 80% of the United States market for Bryant's internal grinding machine is concentrated in only 10 states. For the domestic market, the company's policy is to have direct representatives cover the areas of highest market potential while using agents in areas of small market potential and big distances. The S.I.C. study pointed out new areas of sufficiently large and concentrated market potential to justify a change from agents to direct representation.

3. Efficient Location of Sales Prospects.

One of the duties of sales management is to locate new prospects for the company's product. How can this be accomplished by using the S.I.C.? Prospects can be located by utilizing modern marketing research survey techniques to determine product usage and buying habits for the various plants in selected S.I.C. industries.

Sales-Planning Blueprints

For example, sales-planning blueprints were prepared for Product A on the basis of a detailed market research study. These blueprints provided the following information:

1. The name and location of manufacturing plants with a need for Product A or competitive products.

2. The name and title of an official in each of these plants responsible for the specification and purchase of Product A.

3. The purpose for which Product A is used.

4. The product in which Product A is being used.

5. How much Product A his plant purchases.

6. The manufacturers from whom he purchases products competitive with Product A.

7. Any gripes or comments about the product itself, alternative products, service, delivery, etc.

8. The size of his plant.

9. The principal product manufactured in his plant.

10. A list of plants in the same industry that do not have a need for Product A.

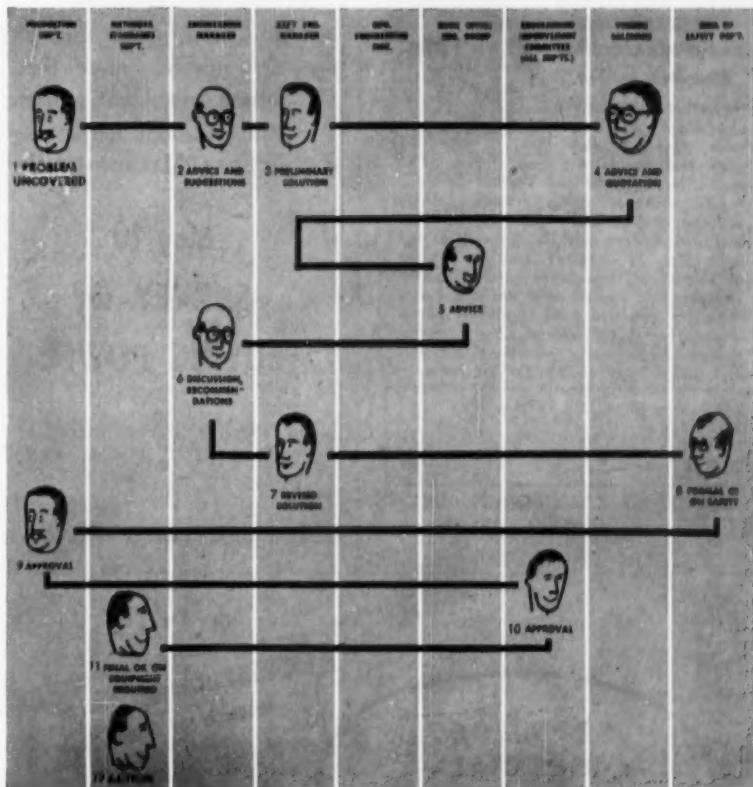
The principal product manufactured was determined so that each plant could be classified into a 4-digit S.I.C. number.

These sales-planning blueprints gave each salesman necessary marketing information to help him decide where, when, and on whom to call, and the best sales approach to use.

The company manufacturing Product A reports that these sales-planning blueprints, built around the S.I.C., are the most valuable single contribution to the integrated marketing program which produced the phenomenal increase in its share of the market.

Where was your last order "born"?

Another "sale" from FACTORY's files



Call this a clinical chart if you want... a bedside report from the "sales maternity ward" of a manufacturing plant...

Take a good look... note the critical conditions—all the care needed to bring an order into the world...

See how many specialists get into the act... this actual case, like all the others in FACTORY's files, certainly shows orders aren't hatched in incubators.

And that there's no one man, no super-title, no set pattern, no shortcut...

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... in FACTORY, the only businesspaper published exclusively for this group, and the one serving it better than any other.

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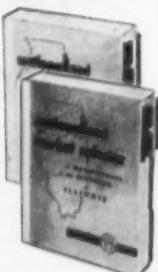
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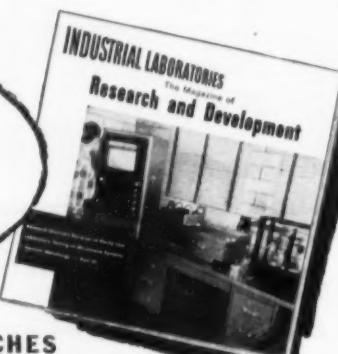
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The chart on page 40 shows that there is a greater sales increase in areas where Product A is sold through distributors than in areas where it is sold direct by the company's sales force. This is directly attributable to the sales-planning blueprints, which made the time spent selling Product A more profitable and thereby achieved the main objective of getting the distributors' salesmen to spend relatively more of their time on Product A and less of their time on other manufacturers' products in their line.

Also you will note that part 10 of the sales-planning blueprint provides the salesmen with a list of plants in the S.I.C.s. he is covering in which a sales call would be wasted. When it costs anywhere from \$17 to \$40 for industrial sales calls, it is almost as important to know *where not* to call as *where* to call. This valuable information cannot be developed from advertising inquiries.

4. Measurement of Sales Effectiveness. Area market potential figures can be utilized by marketing management to measure sales effectiveness in each territory. Periodically sales management may compare its proportion of sales in each territory against the market potential for that territory and establish a relative measure of sales effectiveness.

For example, two yardsticks of sales effectiveness were used for Product A in each territory. First, the percent of total company sales that came from each territory was compared with the percent that would be expected in terms of the S.I.C. weights and percentages.

Then the total industry sales in each territory were broken down into those obtained by Product A salesmen and those obtained by their competitors. As we have seen on the chart, this second index showed the greatest improvement in areas where Product A was being sold through distributors.

As a result of these analyses of sales effectiveness, plus an analysis of number of sales calls to be made, the manufacturer of Product A decreased the Chicago area sales force and increased that of the Los Angeles area, which no doubt made a positive contribution to the increase in share of the market which the company obtained.

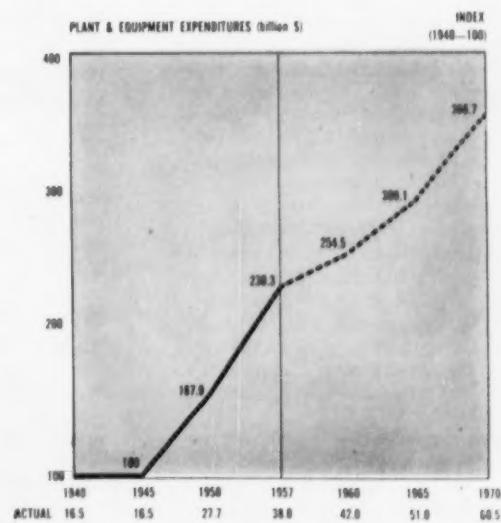
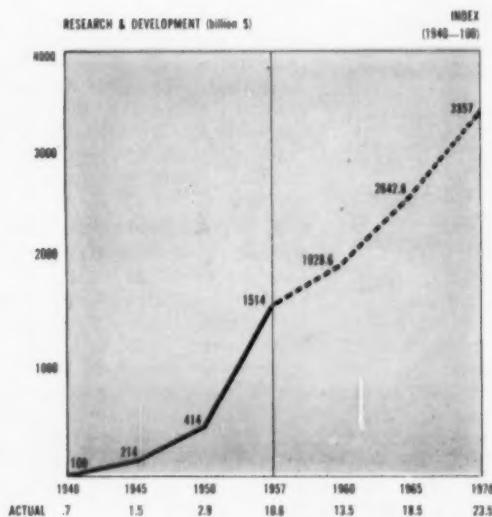
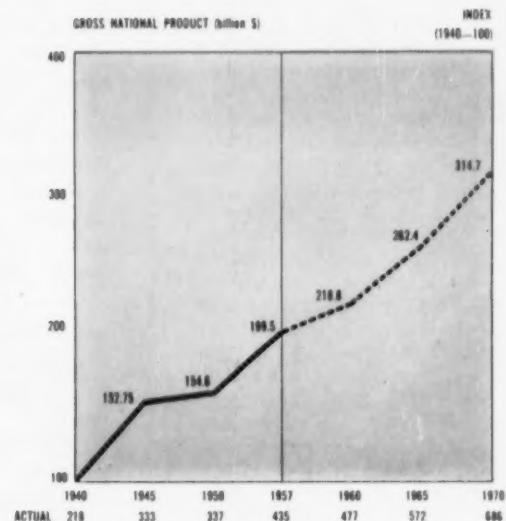
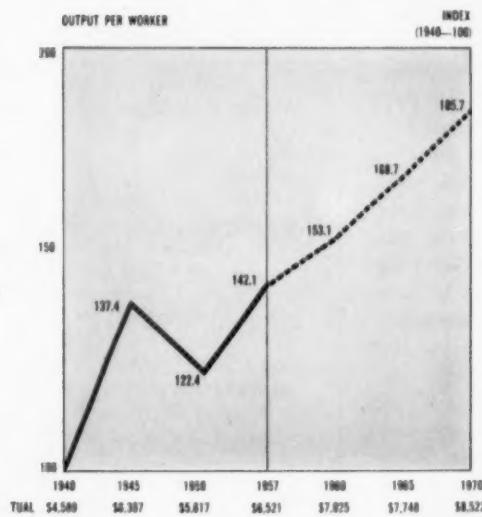
S.I.C. Finds Your Market

The major task in marketing industrial goods is to find and sell the manufacturing plants with problems solvable through the use of your products. This can most effectively be done with the aid of S.I.C. marketing data applied to the entire industrial marketing program — product development, advertising, sales management.

Sales Management

MARKETING PICTOGRAPH

LOOKING AHEAD TO 1970



Source: Economics Department, McGraw-Hill Publishing Co., New York

The S.I.C.

-Its Strength and Weakness

The Felters Company of Boston, a leading manufacturer of felt, finds that the classification of sales according to the S.I.C. has been a tremendous help in locating areas most fruitful of new customers. The Allen Manufacturing Company, Hartford, found that a small sample survey based on the S.I.C. yielded accurate and very useful data on the total size of the socket head screw market.

Ludwig S. Hellborn, of General Motors, on the other hand, in his talk before a national conference of the American Marketing Association—"Can the S.I.C. Yield Accurate Marketing Data?"—expressed serious doubts about the reliability and validity of statistical data based on the S.I.C.

The purpose of this article is to describe some of the statistical problems you may run into when using marketing data based on the S.I.C. and point out how you may overcome them.

S.I.C. Classification Fundamentals

The Standard Industrial Classification is a numerical system set up by the Federal Government to classify different segments of industry. It is published in detail in Standard Industrial Classification Manuals, Volume 1 and 2, and obtainable from the Superintendent of Documents, United States Government Printing Office.

For manufacturing industries the S.I.C. system combines approximately 450 individual industries (designated by a 4-digit code) into 150 industry groups (designated by a 3-digit code). The industry groups are, in turn, combined into 20 major industry groups (designated by a 2-digit code) making up the total manufacturing aggregate.

Such a classification is based on the product produced or operation performed. There are, for a few industries, other classification characteristics such as materials or processes used. For example, major group 29 (products of petroleum and coal) is based partly on the materials going into the product. In general, similar products or establishments involved

Francis Hummel and Nathaniel Kidder continue their discussion of the S.I.C. as an aid to successful marketing. In the preceding article they showed how it is designed to mesh effectively with the aims of industrial marketing executives. Here their exposition shifts momentarily to the negative side as they set up a few caution signs to indicate where broad definitions or other ambiguities in the S.I.C. breakdowns can lead the unwary user astray. At the same time they call attention to a "built-in" solution to some of these problems provided by the Government.

Despite certain present weaknesses, the authors remind us, the S.I.C. is a sound marketing tool—packs a payoff for those who take the time and trouble to learn how to use it properly.

in similar production activities are grouped together with the product as the major determining factor of classification.

Problems in Using the S.I.C.

Even with such a comprehensive classification system, there are four major problems which arise when applying the S.I.C. to marketing data. We outline them first and then offer suggested solutions.

1. The Multi-product Establishment. The Bryant Chucking Grinder Company manufactures a line of machine tools and special gauges. The principal product is the machine tools (S.I.C. 3541). All data on sales, employment, value added, etc., for their gauges, which should be recorded in

S.I.C. 3543, is recorded in S.I.C. 3541, since this is the principal product.

This example indicates that a major classification problem arises when a company turns out two or more products falling into more than one industry category. In such a case the company's S.I.C. classification is based on the principal product while all general statistics reflect data on both the primary and secondary production activities.

A plant of the Atlas Plywood Corporation manufactures both doors (S.I.C. 2431) and boxes (2444). Some census takers classify this plant in S.I.C. 2431, while others have classified it in S.I.C. 2444. Thus we see that another aspect of the multi-plant problem is the difficulty of deciding which of two or more S.I.C. numbers should be used.

2. "Captive Plant". The Bassick Company, of Bridgeport, Connecticut, manufactures ball bearings (S.I.C. 3593) and powdered metal products (S.I.C. 3464) for its own use. Yet, all data on Bassick are recorded under its principal product, casters (S.I.C. 3429). This illustrates the "captive plant" or internal production problem. Generally, manufacturing establishments are classified by their end product without regard to the so-called "captive production" of component products made and used by the concern.

3. Varying Production Methods. A machine tool manufacturer in attempting to sell automatic bolt making machines to two plants manufacturing industrial trucks may find a ready market in the first plant, which produces its own bolts, but no market in the second, which purchases bolts from an outside supplier. Yet both plants would be in S.I.C. 3565. A market for an industrial product lies only among manufacturing plants that have a use for that product. Such a use prevails if the product solves some manufacturing problem. The problem exists among manufacturing establishments within the same industry only if relatively similar production methods are used.

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A. F. (Tisch) Tischer, 1510 Hanna Bldg.
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DOuglas 2-4600

Product Engineering

McGraw-Hill Magazine of Design Engineering and Product Development

McGraw-Hill Building, New York 36, N.Y.



4. The Need for a Finer Classification. Plants manufacturing early warning radar systems and those making table model radios are both in S.I.C. 3661. If you were investigating the market for magnetrons, you would be interested in the former and not in the latter. The fact that you have sold to one plant in any one S.I.C. does not necessarily mean that all plants in the S.I.C. are potential customers for your product. Since some of the 4-digit classifications combine too many "dissimilar" types of plants, the specialized product manufacturer has difficulty using the available data.

Solutions to these Problems

The Census of Manufactures has a built-in solution to some of these problems. This is the table of specialization and coverage ratios, Table 5 in each industry report of the 1954 Census of Manufactures. The table shows (1) the percentage of the total shipments of the industry represented by its principal product, and (2) the percentage of national shipments of this principal product actually turned out by that industry. For example, Table 5 of the report on S.I.C. 2613, Building Paper and Building Board Mills, shows that (1) 98% of the shipments of the plants classified in this S.I.C. is building paper and building board while 2% of the shipments from these plants is made up of secondary products, and (2) 97% of the total shipments of building board and building paper comes from these plants while 3% of the shipments comes from plants classified in other S.I.C.s.

It should be pointed out that sometimes an apparent problem of multi-product classification is in reality anything but a hindrance to the industrial marketer. In the case of a firm with products falling into two industries, the plant may have similar production processes for each product and the seller using S.I.C. data would consider this plant a potential customer in either industry. A firm producing washing machines (S.I.C. 3581) and kitchen cabinets (S.I.C. 2514) can be considered in part as a sheet metal plant. If you have a product to sell that applies to fabricating or painting sheet metal, you would discover this firm irrespective of the S.I.C. classification.

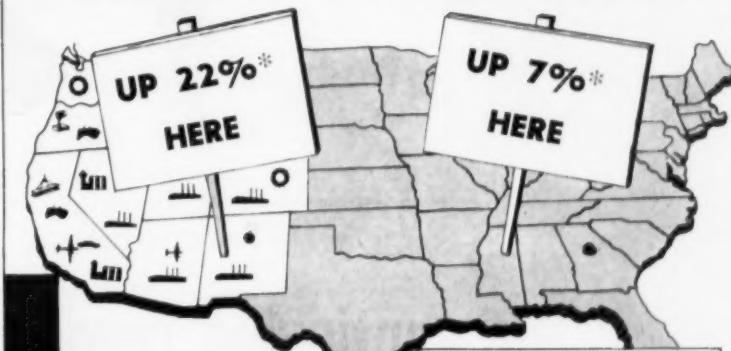
A well conducted market research survey can provide the solution to many S.I.C. classification problems. For example, a manufacturer of extruded metal parts conducted a survey of plants in S.I.C. 3661, the electronics industry, to determine their purchases of certain kinds of extruded parts, and found the percentage of

plants in this industry that could use his product. Thus, he overcame the S.I.C. problems involved in captive products, varying production methods, and the need for a finer classification.

In addition to determining the percentage of potential customers in S.I.C. 3661, he obtained a list of plants with other valuable marketing data, such as: the amount of extruded parts they purchase, the names and titles of persons most concerned with the specification and purchase of these extrusions, and the specific type of surface treatment and fabrication the extrusions required.

The S.I.C. has proven to be an extremely valuable tool for industrial marketers in spite of certain statistical problems involved in its use. There may not be general agreement as to the proper classification of some industrial plants or how to handle the secondary product data or captive plant statistics. But some of these problems are more apparent than real and can be overcome through the use of modern marketing research methods. With proper care, one can make successful use of S.I.C. data in the happy solution of many industrial marketing problems.

Western METALWORKING GROWS 3 TIMES FASTER



WESTERN METALS serves Western Metalworking ... offers you

* Percentage gain in metalworking employment (SICs 33 to 39 inclusive) from 1954 (U.S. Census of Manufactures) to Jan. 1, 1957. Source: Sales Management's 1957 Survey of Industrial Buying Power.

- 1 **115% GREATER COVERAGE** than the average western circulation of the two leading national weekly metalworking publications — goes to men in production, engineering and purchasing management who *buy or specify* metals, machinery, equipment, industrial supplies or components, and who have been selected to receive WM by more than sixty firms that sell to and intimately know the Western Metalworking Industry.
- 2 **WESTERN EDITORIAL IMPACT** is achieved by articles featuring western problems and western plant applications, and from "home-town" news of western metalworking management gathered from every important western industrial area.
- 3 **WESTERN PRODUCT IDENTIFICATION** can be established by carrying local addresses and phone numbers in your WM advertising. You can merchandise your western sales engineering staff and your western sources of supply — tell western plant buyers where they can buy your product, on whom they can count to engineer its application.

WESTERN METALS

A JENKINS PUBLICATION

2035 MIRAMAR ST.
LOS ANGELES 57
CALIFORNIA

BPA NBP

SEND FOR WESTERN METALS' "MARKET AND MEDIA KIT" With statistical data on the Western Metalworking Market, growth and size of each state, area and classification; special information on new industries such as rocket and missile, and electronics; also WM's latest data file, BPA report, rate card, editorial index and current issue.



**The continuing revolutions in today's
marketing picture
call for many new strategies**

in Packaging, for example . . .

One of the most significant developments in packaging is this . . .

" . . . The sales manager is the man who makes most of the final packaging decisions . . .

" . . . The primary reason for a package change is to increase sales."

As reported by the Folding Paper Box Association from a survey of 307 of the nation's grocery manufacturers.

The following packaging concerns are already taking advantage of this development . . . advertising in the pages of

Sales Management.

- **The Dow Chemical Co.**
- **Goodyear Tire & Rubber Co.**
- **Federal Paper Board Co. Inc.
National Folding Box Div.
Morris Paper Mills Div.**
- **Reynolds Metals Co.**
- **Lassiter Corp.**
- **Continental Can Co.
Robert Gair Div.**
- **Stone Container Corp.**
- **Lermer Plastics, Inc.**
- **Celanese Corp. of America
Plastics Div.**
- **Sealright Company, Inc.**
- **Container Corp.**

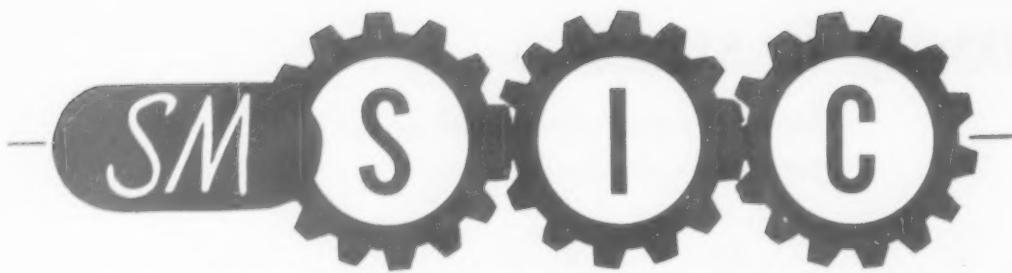
Sales Management

THE MAGAZINE OF MARKETING

New York

Chicago

Santa Barbara



AMERICAN INDUSTRY IN 1956

Sales, Employment, Geographic Patterns

We present here a truly unique collection of data: rankings of the 100 leading counties in each of 26 different industries—so that they pinpoint those areas which account for the bulk of current employment in each industry. In each case the county rankings, based on 2-digit classifications are supplemented by national data for 4-digit breakdowns.

Each ranking reveals a completely different pattern of concentration worthy of careful study. Students of industrial location often consider first so-called "ubiquitous" industries, such as food processing, printing and publishing, construction, public utilities, wholesale trade, finance, real estate and insurance and the service industries, all of which tend to follow the distribution of urban population. Rankings in these industries are all quite similar, with New York, Cook and Los Angeles counties generally in the lead.

On the other hand, most other industries tend to be sporadic. Their regional patterns arise from such circumstances as accident, history, the location of key resources and markets.

Tobacco products, along with Rubber products, are the most highly centralized industries with only a handful of counties making up the bulk of total employment. Cigarette manufacture is concentrated in the rich tobacco growing regions of North Carolina and Virginia and is dominated by American Tobacco, Reynolds and Liggett & Myers, with plants in Forsyth, Durham and Rockingham counties, N. C., and Henrico and Dinwiddie counties, Va.

Cigar output centers in Hillsborough, Fla., in the making of "Havana" cigars with Cuban tobacco, and in Philadelphia, where mechanization has become important.

Rubber manufacture became centered in Summit county, Ohio, when George Goodrich moved to Akron in

1870. This proved to be a strategic location when the auto industry developed in Detroit (Wayne county). Other important rubber centers are Los Angeles, where several major producers have branch plants, Middlesex, Mass., and New Haven, Conn. (rubber footwear). Etowah, Alabama ranks high as the home of the largest tire factory outside of Akron.

Textile mills are centered in New England, New Jersey, eastern New York and Pennsylvania, and in the Southeastern states from Virginia through the Carolinas, Georgia, Alabama and Tennessee. The much publicized migration from New England to the South to get closer to cotton and cheaper labor seems to have slowed down. In recent years southern textile activity may have been hit by Japanese imports.

Apparel plants are highly concentrated in the fashion centers of New York, Philadelphia, Los Angeles and Cook counties. The industry is characterized by small plants in which style and design, and proximity to showrooms for department store buyers, play the chief role. Since 1947 Los Angeles and Dallas have begun to challenge New York's predominance in this field.

Lumber mills and other wood manufacturers are found in small towns and rural areas, following the distribution of the forest areas of such states as Oregon, Washington and northern California, and Alabama, Georgia and Tennessee. Lumbering today has shifted completely away from the now deforested Great Lakes region as a result of wasteful exploitation at the turn of the century.

Furniture manufacture is concentrated in the three major fashion centers of Chicago, New York and Los Angeles. However, Grand Rapids (Kent county, Mich.) has retained its status from the time when furniture output was an extension of lumbering,

as is true of such areas as Guilford, Davidson, Wayne, Iredell and Catawba counties in N. C., Chautauqua county, N. Y., and Manitowoc county, Wis.

Paper and paper products. This industry's pulp mills are centered close to the forest areas of the Northwest and the South, while plants making paper and paper products, including bags and containers, tend to follow the distribution of major consumer markets. Hampden county, Mass., ranks high because of the output of fine writing paper. Sutherland Paper is located in Kalamazoo county, Mich., Brown and Bigelow in Ramsey county, Minn.

Chemicals. This is the most rapidly growing industry in which research plays a key role. Heavy industrial chemicals (sulphuric acid, soda ash, caustic soda, chlorine and ammonia) are produced near raw materials sources and in port cities to save on transport costs. The more expensive light chemicals (pharmaceuticals, etc.) can follow the distribution of the market. Most big industrial metropolitan areas have good chemical representation. In the New York area, heavy chemical output is centered on the Jersey side of the Hudson. In Philadelphia, big plants are found on both sides of the Delaware River, down to Wilmington (New Castle county), home of the DuPont Company. Chemicals are strongly entrenched in Virginia and Tennessee as a result of TVA development, and along the Ohio River down to Charleston, W. Va. (Kanawha county is known as "Chemical Valley"). Cheap transport also explains the concentration of heavy chemicals along Lake Erie (Cuyahoga county, Ohio) and in Wayne county, Mich., which is close to large salt deposits. Midland county, Mich. is a large producer of magnesium. Chemicals are now important in the Gulf areas because of the availability of sulphur, salt, lime and cheap

**Are you looking for
Market Information
on any of the products or
services in this list?**

- Diesel Engines and Gas Turbines
 - Steam Turbines and Engines
 - Condensers Cooling Towers, and Heat Transfer Equipment
 - Electrical Equipment and Distribution
 - Lubricants and Lubrication Equipment
 - Refrigeration and Air Conditioning
 - Pumps, Compressors and Accessories
 - Construction Materials
 - Maintenance and Repair Equipment and Supplies
 - Mechanical Power Transmission
 - Fire Prevention and Safety Equipment
 - Instruments and Controls
 - Boilers and Accessories
 - Fuels
 - Firing Equipment
 - Coal and Ash Handling
 - Fans and Dust Collectors
 - Hydroelectric Power
 - Water Treatment and Waste Disposal
 - Piping, Valves and Fittings
 - Atomic Energy

The purchase of any product in the above check list is largely controlled by engineers (regardless of title) having job interests or responsibilities in the field of power generation, transmission, distribution and utilization in public and private utility plants, manufacturing industries, mining industries and service establishments such as buildings, laundries, hotels, hospitals, etc. Power service includes steam, electricity, compressed air, refrigeration, gas, hot and cold water.

POWER ENGINEERING, as the magazine which serves these engineers most effectively, is consequently the magazine which will

POWER ENGINEERING, as the magazine which serves these engineers most effectively, is consequently the magazine which will



Power Engineering

TECHNICAL PUBLISHING CO., 308 EAST JAMES ST., BARRINGTON, ILLINOIS

(Suburb of Chicago)

Publishers also of **PLANT ENGINEERING**

New York 17—Joseph E. Halloran, 1613 Graybar Bldg. Murray Hill 5-3779.
Chicago 3—Warren F. Saas, 110 S. Dearborn St., DEarborn 2-5453.
Cleveland—William L. Black, 1530 Ruth Ave., Cuyahoga Falls, Ohio. SWandale 4-8736.
Philadelphia — Oscar Wilds, 1235 Jericho Rd., Abington, Pa. Turner 7-6688.
Boston-New England—Charles R. Lippold, 5 Spring St., Riverside, Conn. Neptune 7-2210.
San Francisco 5 — McDonald-Thompson, J. Leslie Meek, 625 Market St. Yukon 6-0647.

Los Angeles 5 — McDonald-Thompson, Connie J. Grabb, 3721 W. 6th St. Dunkirk 7-5391.
Seattle 4—McDonald-Thompson, T. Harry Abney, 1008 West Ave. Elliott 3767.
Denver 2—McDonald-Thompson, Robert H. Heidersbach, 2 Colorado National Bank Blvd. Keystone 4-4669.
Houston 6—Frank N. Vickrey, McDonald-Thompson, 3217 Montrose Blvd. Jackson 9-6711.
Tulsa—Ted R. Trautman, McDonald-Thompson, 2010 South Utica, Riverside 3-1981.

POWER ENGINEERING reaches more power specialists per advertising dollar.

JULY 10, 1957

Power Engineering

- Report Plant Headcount - How Many Do It If Marginal
- Business Approach of Forecasting: Conditioning by Economic Indicators
- Which Hiring for High Profits and Low Costs
- Deve. Person Planning: Big Picture Forecasting: Timeline
- highlight of Atomic Person Developments
- Predictive Advisor: An Edge Margin for Industrial Person Plan
- Short Report: Harmonized Job Categories
- Using a Standard Transformer as Voltage Regulator
- Why the Air Conditioning Cost Few Millions
- How a Capacitor Works
- Power Electronics and Reliance Can Be Disengaged
- Smart House Power Plant: At 12,000 Feet
- In Your Choice Drive or Smart Sheet?
- How to Use Your Better Table Calculations Properly
- Smart Generating Station: Generating Costs
- Energy of the Pendulum Buffer

REGULAR DEPARTMENTS

Engineering Practice	Power Engineering Handbook	0
Energy What They Left Us	Getting Started	10
Renewable Resources	Bendix Service Part Cards	10
Supplemental Boxes	Advantages Index	10
Contributor Boxes	Classification of the Items	10

**READEX available in
POWER ENGINEERING**

Every month READEX surveys a cross-section of POWER ENGINEERING readers to learn directly from them what advertisements and editorial items were of special interest to them.

Through our monthly READEX reports you will get information to help you design advertising for conscious reading. It will tell you what kinds of copy and layout techniques produce greater reader interest for products in general, and your advertising in particular in the power engineering field.

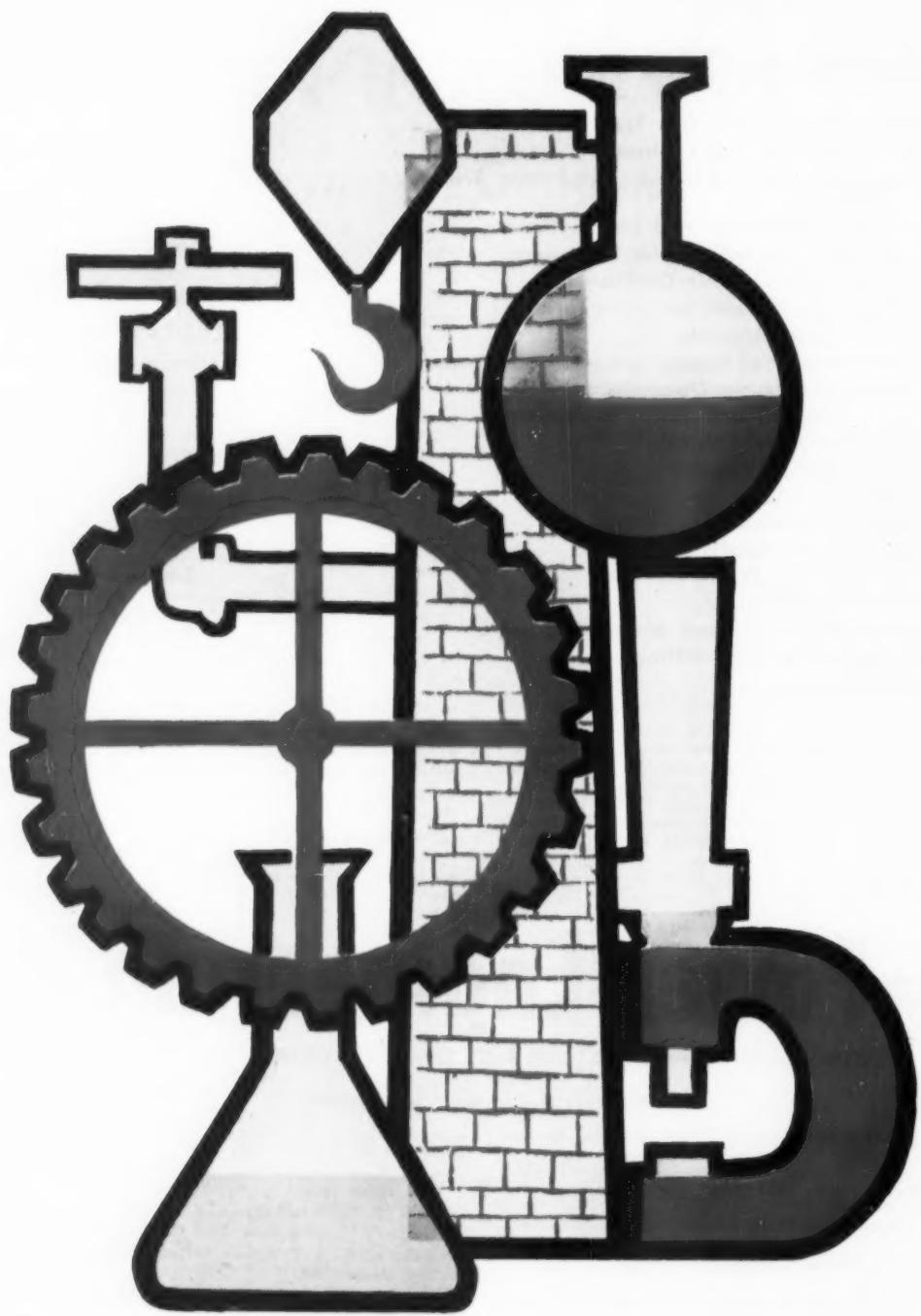
Write for new booklet analyzing the factors which increase readership.

present your sales message to your most important buyers with the greatest sales results.

POWER ENGINEERING will be glad to help you in your market analysis. We don't have all the answers but may have some valuable field facts you can use.

Rather than give a few segments of general information on this page, we would prefer to send you specific data on your product. For prompt action, write or phone our representative in your territory, listed below.

if you need proof of industrial



advertising effectiveness . . .

. . . the current, continuing series of Industrial Advertising Research Studies by Tide can give you three-way help in these vital areas:

1. In advertising planning. Process charts and tables of actions taken after reading industrial ads.
2. With top management. Facts in these studies are used to show management executives how ads pay off.
3. With salesmen and distributors. The case examples show processes by which ads lead to actual sales.

A total of more than 100 actions taken after reading industrial advertisements are reported upon in detail in the first five TIDE studies. The individual tables of actions taken after reading ads show specific steps taken by each of five major classes of executives studied so far:

engineers	production managers	purchasing agents
industrial designers		financial executives

Comments on this Series

AL TUCKER, Vice President, Sales
The Henry G. Thompson & Son Co.

"Every industrial advertising manager, industrial sales manager, regardless of title, and industrial advertising agency should be aware of the study TIDE Magazine is making."

G. W. HOWARD AHL,
Executive Secretary-Treasurer
The National Association of Purchasing Agents
"You did your usual good job in the presentation of 'Advertising to Industry'."

JOHN C. FREEMAN,
National Industrial Advertisers Association
"TIDE has gone out to the other end of the pipeline to find out what readers of ads do about them."

LEO A. CODD, Executive Vice President
American Ordnance Association
"Congratulations on the new series of studies in TIDE on advertising to industry. It is a topic of tremendous current importance."

JOHN F. ROONEY, A.E.
Gear-Marston Advertising
"Just to voice my appreciation of the imaginative approach you are taking in your 'Advertising to Industry' articles — should be rewarded in a tangible way — subscriptions . . ."

R. L. HAMILTON, President
The Dumore Company
"A mighty fine presentation—and a good story told in each bulletin."

J. R. VAN ARSDALE, Sr. Vice-President
Charles L. Rumrill & Co., Inc.
"I would like to make sure that our industrial account executives and copywriters read 'Engineers are Paid to Read Industrial Ads'."

Some Companies Used as Sources for TIDE Studies

Types of Major Industries Reporting on Tide Industrial Studies
Atomic Energy
Automobiles
Aviation
Building Materials
Business Machines
Brass Mills
Chemicals
Cranes & Hoists
Construction
Cosmetics
Drugs
Engineering
Engines
Electrical
Foundries
Home Furnishings
Machine Shops
Machinery
Materials Handling
Metals
Marine
Packaging
Printing Equipment
Plastics
Power, Electric
Radio & TV
Rubber Manufacturers
Rugs & Carpets
Textiles
Trucks
Testing Equipment
Toolmakers
Tools, Machine
Television
Welding Shops Societies
American Society for Metals
A.S.M.E.
N.A.P.A.
A.S.T.E.

Tide the magazine for advertising executives

286 FOURTH AVENUE • NEW YORK 16, N.Y. • LEXINGTON 2-1780

**TOTAL MANUFACTURING EMPLOYMENT OF THE UNITED STATES,
DISTRIBUTED BY GEOGRAPHIC REGION: 1899-1954**

Year	Total U.S. Manufacturing Employment 1/ (millions)	Manufacturing Employment of Geographic Regions, As Percent of U.S. Total —								
		New England	Middle Atlantic	East No. Central	West No. Central	South Atlantic	East Se. Central	West Se. Central	Mountain	Pacific
1899	4.9	17.6	34.1	23.2	5.8	9.5	3.7	2.4	1.0	2.7
1909	7.0	16.0	33.8	23.3	5.9	9.7	3.9	3.0	1.1	3.3
1919	9.8	14.6	31.9	27.0	5.7	8.5	3.5	3.1	1.1	4.6
1929	9.7	12.3	29.8	29.1	5.8	10.1	4.1	3.3	1.1	4.6
1939	9.5	11.8	28.9	28.3	5.2	11.6	4.3	3.5	0.9	5.5
1947	14.3	10.3	27.6	30.2	5.5	10.7	4.4	3.9	1.0	6.4
1950	14.5	9.8	27.0	29.9	5.8	11.1	4.4	4.1	1.1	7.0
1951	15.3	9.6	26.5	29.9	5.8	10.9	4.4	4.2	1.1	7.7
1952	15.7	9.4	26.5	29.4	6.0	11.0	4.4	4.2	1.1	8.0
1953	16.7	9.4	26.2	30.0	5.8	10.7	4.4	4.3	1.1	8.1
1954	15.7	9.1	26.3	28.5	6.0	11.1	4.6	4.6	1.2	8.6

1/ Includes employment, both production workers and non-production personnel, at operating manufacturing plants only; excludes employees of manufacturing firms at separately reported central administrative offices, sales offices, auxiliary units, and other non-manufacturing activities.

Source: 1954 Census of Manufactures Preliminary Report, Series MC-G2; 1953 Annual Survey of Manufacturers; and 1947 Census of Manufactures.

fuel. And of course Benton county, Wash., and Anderson county, Tenn. are atomic energy centers.

Petroleum and Coal Products. Here the chief emphasis is on oil refining plants, which tend to locate in relation to crude oil sources, transport facilities (port cities) and markets. The big centers are the Gulf ports of Jefferson, Harris, Galveston counties, Texas, and East Baton Rouge county, La., which get crude oil by pipeline and then ship by tanker. Smaller refining capacity is found in such inland centers as Tulsa county, Okla., and Lake county, Ind. Philadelphia and New York (New Jersey side of the Hudson) are the chief recipients of tanker crude oil and are of course important gasoline consumers. Los Angeles is both an important oil source and consumer, hence a natural focal point for refining capacity.

Leather and Shoe output has been centered in the New England and Middle-Atlantic states for the past century without much change, in such counties as Essex and Middlesex counties, Mass., and in Broome county, N. Y., home of Endicott-Johnson, one of the world's biggest shoe companies. Midwestern shoe centers in St. Louis, Cincinnati, Chicago and Milwaukee

date back to post Civil War days when German immigrants brought with them their knowledge of tanning and leather working. A similar accident of history is responsible for Fulton county, N. Y. (Gloversville) dominating U. S. glove manufacturing, as the result of Scottish glovemakers settling in that area in the eighteenth century.

Stone, Clay and Glass. Glass plants locate with respect to markets, raw materials (chiefly sand) and cheap fuel; which explains the large number of such plants in Pennsylvania, Ohio and West Virginia, close to coal sources. But with the economies made possible by large scale production, the industry very quickly became highly concentrated despite the wide availability of fuel and sand. Important flat glass plants are located in Washington and Westmoreland counties, Pa., Steuben, N. Y., and Lucas, Ohio, as well as in the Detroit, Chicago and Los Angeles areas.

Cement output is identified with Lehigh and Northampton counties, Pa., and Warren county, N. J.—the so-called Lehigh Valley, because of limestone deposits, coal and proximity to large markets.

Pottery manufacture is important

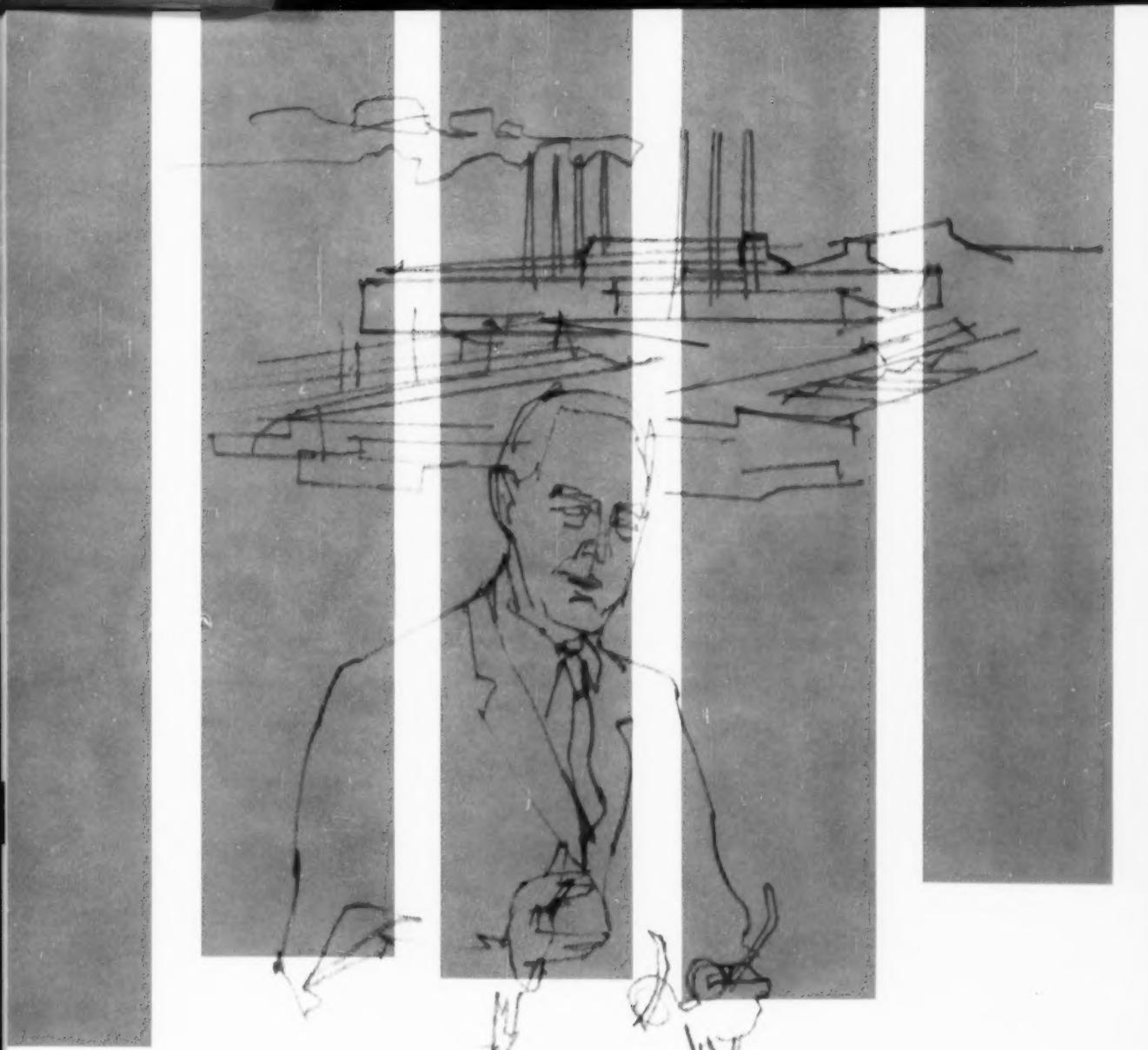
in Mercer, N. J., and Columbiania, Ohio.

Primary Metals. About one half of all primary metals output is concentrated in an area extending from southwestern Pennsylvania (Allegheny county) through northern West Virginia (Hancock county), northeastern Ohio (Cuyahoga, Mahoning, Stark and Trumbull counties) to eastern Michigan (Wayne and Saginaw counties). Allegheny county has always been the steel center because of easy access to high grade coking coal and ore from the Great Lakes. Jefferson county, Ala., is a perfect site for steel output, with both ore and coal in close proximity.

Other steel centers are found on the Atlantic coast with access to ore imports, such as Baltimore, Maryland, which is also a large copper refining center. Copper processing is important also in New Haven county, Conn., and Oneida county, New York.

More recently established primary metal centers may be found in the western states in Pueblo, Colo., the Provo plant in Utah county, Utah, and of course the Fontana plant in Los Angeles.

Fabricated Metal Products. The distribution of plants here is similar to



Sales Management's 1957 Survey of Industrial Buying Power
Poses this Challenge to Every Company:

HOW TO KEEP PACE WITH THE GROWING U.S. ECONOMY





How to Keep Pace

With the Growing

U.S. Economy

Most American companies are dedicated to growth.

They have five- or ten-year plans and goals established at intermediate dates which they try vigorously to attain if not in one way then in another. They may operate in an old, established field, in one of the great new industries, or in both.

The exciting, vigorous advertising of restless companies like these clusters thick in the pages of TIME, The Weekly Newsmagazine. Just riffle through any issue and see for yourself.

TIME has always been a natural, logical and highly productive associate for growth companies because TIME, too, is dedicated to growth.

The investment in TIME of industrial advertisers, with a message for executives in business and industry, was some \$24 million* last year—\$4½ million more than the year before, and \$6½ million more than in 1954. And industrial advertisers, in the first quarter of this year as in '56, invested more dollars in TIME than in any other magazine.

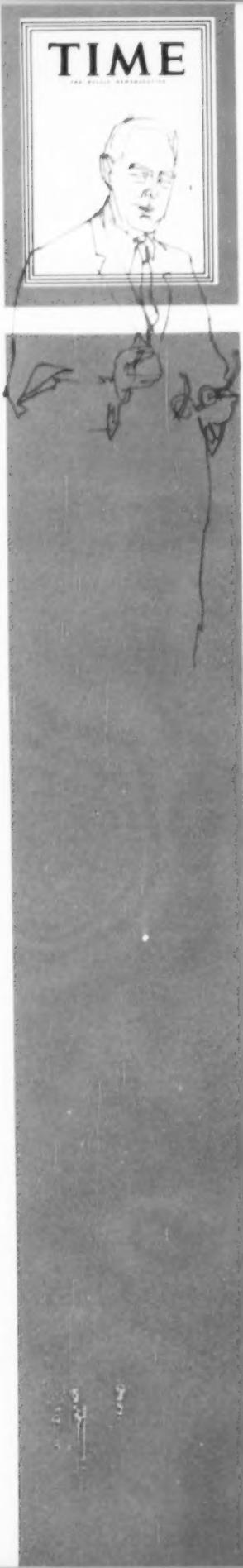
TIME continues to be the world's leading industrial advertising medium.

TIME —where growth companies
grow greater



*Total advertising in TIME for 1956 amounted to \$42,600,000.

TIME



**—where growth companies
grow greater**



DR. JAY M. GOULD

The SM estimates of employment in the ranking of the 100 leading counties in the 2-digit industries and in the tables showing "Industrial Potentials by Counties" were prepared by SM's research staff, Market Statistics, Inc., under the guidance of Dr. Jay M. Gould.

Dr. Gould is the managing director of Market Statistics and the research director of SALES MANAGEMENT'S *Survey of Buying Power*, which under his direction has become the most widely

used non-governmental data book on marketing. More than \$200 billion of sales quotas are based on the *Survey* annually.

Dr. Gould received his Ph.D. from Columbia University in 1946. The author of "Productivity Trends in Public Utilities" and numerous works on economics and marketing, he has served as an economist on the staffs of Rutgers University, *Business Week*, the National Bureau of Economic Research and the Econometric Institute.

that of primary metals, as would be expected. Illinois is particularly important in canning, also California, Maryland, New Jersey and Pennsylvania, close to the large food markets. Cutlery output is centered in Connecticut (New Britain) and in Winnebago county, Illinois. Heating and plumbing equipment is centered in Ohio, Illinois and Pennsylvania.

Machinery, Non-electrical. Machinery manufacture is located close to the industrial consumer. Thus, textile and shoe machinery is produced in the textile and shoe states of New England, oil field equipment near the oil fields of Texas, Oklahoma and California, etc. The machine tool industry is centered in the areas dominated by fabricated metal products, especially Hamilton county, Ohio, along with Cuyahoga county, Ohio, Wayne county, Mich., and Milwaukee, Wis. Cook county, Ill., Rock Island, Cook and Peoria counties, Ill., and Milwaukee county, Wis., are farm machinery centers, as would be expected from the middle west emphasis on farming. Montgomery county, Ohio,

is an important business machine center (National Cash Register), as is Broome county, New York (IBM).

Electrical Machinery. Plants here tend to develop in the large urban centers serving the national market. Two big companies, G. E. in Schenectady county, N. Y., and Westinghouse in Allegheny county, Pa., have always dominated the industry, and both have decentralized considerably, particularly in the case of household appliances. The most dynamic component of this group is electronics, which centers chiefly in large urban sections within easy access to university-trained brain power.

Transportation Equipment. Auto output is very highly concentrated, with Wayne county, Mich., dominating the industry as does New York in the case of apparel. As a result, the county has a wide amplitude of cyclical and seasonal fluctuation, though it is by no means a one-industry area. Other auto centers include Genesee county (Flint, Mich.), St. Joseph county, Ind., and Los Angeles county.

Shipbuilding is important in San Diego county, Calif., in the Gulf port counties and in the Atlantic port counties of Philadelphia and Newport News and Norfolk-Portsmouth, Va.

Aircraft output is important in San Diego and Los Angeles counties, Sedgwick county, Kas., Nassau county, N. Y., King county, Wash., Tarrant and Dallas counties, Texas and Washington county, Md. Hartford county, Conn., is a center for propeller and engine output. Cook county, Ill., and St. Louis county, Mo., are important producers of railway equipment, as is Philadelphia and Columbian counties in Pennsylvania.

Instruments. Plant location here often reflects merely the original home of inventors. Thus Monroe county, N. Y., happened to be where George Eastman lived, before his firm grew to 40,000 employees. Minneapolis is the home of the Minneapolis-Honeywell Company. Other instrument plants tend to locate somewhat similarly to electronics plants, in big cities with plenty of brain power resources.

The estimates of value of products shipped in 1956 were prepared by Peter B. B. Andrews, whose reputation for successfully measuring economic movements has long been recognized by private business and government.

Mr. Andrews has followed in these estimates the same method of that he employs in predicting the near-term and long-term outlook in Future Sales Rating, SALES MANAGEMENT's popular copyrighted forecast feature. He checks his findings against the opinion and judgment of a panel of more than 300 key men in industry, government and universities.

As consulting economist, he has

been contributing economic forecasts to SM since 1934. He has done special marketing research for some 75 of the country's business magazine publishers, as well as marketing projects for top industrial enterprises.

He joined Hearst Magazines as economist in 1945. He served as consulting economist to the National Distribution Council and the National Production Authority. He went to Washington in 1941 as industrial economic adviser for General William S. Knudsen, director of the Office of Production Management, and served on the War Production Board from 1941 to 1945.



PETER B. B. ANDREWS

SM SIC Manufacture of Food, Kindred Products—S.I.C. 20

SM Estimates for 100 Counties with 57% of 1956 Employment

COUNTY and STATE	Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus
Cook, Ill.	94.5	1,048	Dallas, Tex.	11.4	178	District of Columbia	6.7	81	Lucas, Ohio	4.8	83	Knox, Tenn.	3.4	61
Los Angeles, Cal.	50.1	920	Marion, Ind.	10.9	127	Black Hawk, Iowa	6.6	37	Jefferson, Ala.	4.8	87	Passaic, N. J.	3.4	103
Philadelphia, Pa.	34.7	441	Hudson, N. J.	10.8	169	Buchanan, Mo.	6.6	48	San Diego, Cal.	4.5	106	Fairfield, Conn.	3.4	110
Kings, N. Y.	31.6	817	Hennepin, Minn.	10.8	175	Woodbury, Iowa	5.9	44	Mecklenberg,			Onondaga, N. Y.	3.3	98
St. Louis, Mo.	24.0	302	Fulton, Ga.	9.9	126	Oklahoma, Okla.	5.8	94	N. C.	4.5	64	Union, N. J.	3.3	73
Baltimore, Md.	23.3	284	Orleans, La.	8.9	170	Dade, Fla.	4.8	143	Duval, Fla.	4.8	143	Duval, Fla.	3.3	81
Wayne, Mich.	22.5	411	Tarrant, Tex.	9.7	102	Bexar, Tex.	5.5	132	Polk, Iowa	4.4	74	Lancaster, Pa.	3.3	141
New York, N. Y.	21.8	438	Wyandotte, Kan.	9.5	51	Freano, Cal.	5.5	136	Montgomery, Ohio	4.4	78	Lake, Ind.	3.3	60
Milwaukee, Wis.	21.2	204	Harris, Tex.	8.8	164	Mower, Minn.	5.5	14	Minnehaha, S. D.	4.3	30	Summit, Ohio	3.2	73
Queens, N. Y.	20.7	209	Denver, Colo.	8.9	157	Providence, R. I.	5.4	211	Berks, Pa.	4.3	122	Cumberland, Me.	3.2	64
Essex, N. J.	20.2	215	Monroe, N. Y.	8.8	195	Dane, Wis.	5.4	80	Vanderburgh, Ind.	4.3	55	Dubuque, Iowa	3.1	37
Hamilton, Ohio	17.8	233	Franklin, Ohio	8.8	123	Stanislaus, Cal.	5.3	75	New Haven, Conn.	4.2	162	Contra Costa, Cal.	3.0	33
Allegheny, Pa.	17.4	270	St. Clair, Ill.	8.2	69	Linn, Iowa	5.3	48	San Joaquin, Cal.	4.1	83	Macon, Ill.	3.0	28
Douglas, Nebr.	16.9	112	Multnomah, Ore.	8.1	177	Dauphin, Pa.	6.1	88	Sedgwick, Kan.	4.1	66	Salt Lake, Utah	2.8	102
San Francisco, Cal.	15.6	260	Jackson, Mo.	8.1	127	Peoria, Ill.	5.0	67	Hampden, Mass.	4.0	123			
Suffolk, Mass.	15.2	281	Shelby, Tenn.	7.8	115	Esex, Mass.	5.0	171	Kent, Mich.	4.0	130	Total Above Counties	972.3	15,477
Cuyahoga, Ohio	15.0	287	Camden, N. J.	7.8	66	Polk, Fla.	5.0	47	Stark, Ohio	3.9	87	% of USA Total	87.3	36.5
Alameda, Cal.	14.3	228	Bronx, N. Y.	7.2	210	Weetcheeter, N. Y.	4.8	87	Worcester, Mass.	3.7	188			
Jefferson, Ky.	13.1	130	Dakota, Minn.	7.3	13	Hillborough, Fla.	4.9	99	York, Pa.	3.7	122			
Santa Clara, Cal.	12.8	162	Calheun, Mich.	7.0	49	Henrico, Va.	4.9	65	Hartford, Conn.	3.7	159			
Middlesex, Mass.	12.8	288	King, Wash.	6.9	224	Davidson, Tenn.	4.8	94	Wapello, Iowa	3.5	18			
Erie, N. Y.	12.8	316	Sacramento, Calif.	6.9	81	Ramsey, Minn.	4.8	73	Albany, N. Y.	3.5	63			

SM Estimates, 1956 for 4-Digit Industries of S.I.C. 20

Between 1954 and 1957 changes in product values in the 42 four-digit industries of this classification ranged from a small decline in some industries to a substantial gain in others. Creamery butter (4-digit code 2021), for example, dipped slightly, while at the other end of the scale, frozen fruits and vegetables rose 20%, a sharp gain that reflected the marketing of a number of new products, particularly complete dinners and various assortments of frozen baked goods. Dehydrated fruits and vegetables in-

creased 17%. The beverage group (3-digit code 208) gained substantially throughout, while margarine, under miscellaneous foods code 209, gained about 9%, largely at the expense of butter. On this and the following pages no aggregate figures can significantly be shown, according to the Census Bureau, either for the 3-digit groupings of industries or the 2-digit overall group because the overlap of some segments would distort the aggregate figure with excessive duplication. The only exception is tobacco.

S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen-sus)	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)	S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen-sus)	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)	
			1954 Cen-sus	SM Est. 1/1/57					1954 Cen-sus	SM Est. 1/1/57		
2011	Meat Products					203	Canned and Frozen Foods					
2011	Meat Packing, wholesale	2,367	9,000	11,073	220.2	2031	Canned sea food	239	238	285	15.1	18.6
2013	Prepared meats	1,318	1,415	1,095	46.0	2032	Cured fish	90	30	39	1.7	1.8
2018	Poultry dressing plants	1,309	1,250	1,000	46.2	2033	Canned fruits and vegetables	1,750	2,229	2,496	118.8	129.5
2018	Dairy Products					2034	Dehydrated fruits and vegetables	140	102	225	7.0	7.6
2021	Creamery butter	1,282	920	905	21.0	2035	Pickles and sauces	717	482	530	21.8	25.6
2022	Natural cheese	1,419	551	573	13.9	2036	Packaged sea food	295	165	184	12.2	12.8
2023	Concentrated milk	350	688	757	13.3	2037	Frozen fruits and vegetables	268	417	501	21.4	21.9
2024	Ice cream and ices	1,587	727	706	36.4	2041	Grain mill products					
2025	Special dairy products	187	296	325	7.3	2041	Flour and meal	803	1,850	1,933	29.0	32.2
2026	Fluid milk	1,880	383	385	14.1	2042	Prepared animal feeds	2,292	2,702	2,824	59.9	64.0
2027	Fluid milk and other products	4,994	4,234	4,087	177.3	2043	Cereal breakfast foods	46	346	345	11.5	11.5
						2044	Rice milling	80	267	272	4.0	4.4
						2045	Flour mixes	131	254	267	5.6	4.6

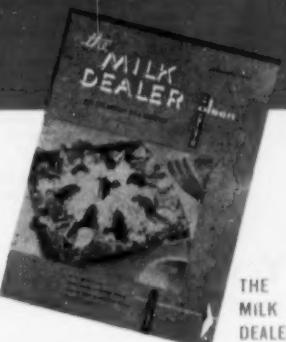
© SM, 1957.

ALL SURVEY DATA are available on IBM cards at nominal cost. These cards, as well as IBM listings of data in the May 10 "Survey of Buying Power" and the "Survey of Industrial Buying Power," regrouped according to your sales territories, may be obtained from Market Statistics, Inc., 432 Fourth Avenue, New York 16, N. Y., Phone MURray Hill 4-3559.

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because the dairy industry is three separate markets . . . each with diversified processes and distribution . . . each requiring specialized advertising and editorial coverage. Each of the 3 Olsen Publications provides specialized, pin-point coverage. All 3 together as Dairy Industries UNIT with more than 22,000 ABC paid subscribers give you blanket coverage of the whole dairy market.

THE MILK PRODUCTS JOURNAL



THE MILK DEALER



THE ICE CREAM REVIEW

MARKET SERVED: Reaches the industry that processes OVER HALF of all milk produced. Market consists of approximately 2,800 plants doing 90% of the milk products business. The Milk Products JOURNAL reaches 90% of these plants with PAID circulation. Annual expenditures for capital equipment in this market top \$41 million. Raw materials and supplies cost \$2.8 billion.

CIRCULATION ANALYSIS BY PRODUCT

Butter	55.0%
Cheese	41.4%
Condensed, evaporated and dry milk	28.6%
Dried whey	5.5%
Fluid milk (for bulk shipment)	19.2%
Fluid milk (bottled or cartoned)	25.8%
Ice cream	13.3%
Ice cream mix	16.7%
Cottage cheese (for bulk shipment)	8.3%
Cottage cheese (packaged in consumer size units)	20.3%
Other products	18.8%
Average Number of Products Handled per Plant	2.7

EDITORIAL COVERAGE: The Milk Products JOURNAL is the only monthly feature article type publication devoted exclusively to the milk products phase of the dairy market. Editor Edward Thom, writing for the dairy industry and the Olsen Publishing Company for 27 years, has made innumerable contacts in dairy plants and in national, regional and local dairy products associations. These contacts, built up through the years, enable him and his staff of six to make The Milk Products JOURNAL the most informative and helpful publication for milk products men.

MARKET TRENDS: Consolidations and mergers have decreased the number of milk processing plants. Surviving plants, however, have become more diversified in number of products handled and milk processing volume has increased many fold. New plant construction and expansion is sweeping the industry to facilitate the handling of greater volumes of milk, and the trend in these plants is to process and package more of all the dairy foods which are sold by MILK DEALERS on their retail and wholesale delivery routes. As this trend continues, a greater percentage of our total milk production will be processed in these MILK PRODUCTS plants.

MARKET SERVED: There are 17,900 milk dealers, 6,200 of which account for 85% to 90% of the nation's fluid milk business. The Milk DEALER reaches 90% of these 6,200 important plants with PAID circulation.

CIRCULATION: Highest PAID Circulation of any dairy trade paper.

ANALYSIS BY PRODUCT HANDLED

Fluid, packaged milk	96.54%
Chocolate milk	92.36%
Buttermilk	89.68%
Cream cottage cheese	84.33%
Butter	72.24%
Orange drink	61.61%
Sour cream	58.72%
Orange juice (fresh)	44.33%
Ice cream	43.27%

6,880 milk plant subscribers operate 146,917 routes, an average of 21.35 routes per plant. Route breakdown: retail, 71.4%; wholesale, 25.0%; combination retail and wholesale, 3.51%. Extremely high 71.4% subscription renewal rate.

EDITORIAL COVERAGE: Editor Edward Thom, associated with The Milk DEALER since 1929, and his staff of six cover all facets of the fresh, fluid milk industry: procurement, processing, packaging, merchandising and advertising. They are in contact constantly with milk plant personnel — local, regional and national milk dealer association officers for latest developments. In 1956 The Milk DEALER carried almost twice as many pages of staff-produced and specially written feature articles as the next milk industry magazine.

ADVERTISING LEADERSHIP: For over a quarter century The Milk DEALER has carried consistently many more pages of advertising than competitive publications.

This is the Record for 1956:

	Pages of Display Adv.	Pages of Exclusive Adv.
The Milk DEALER	1,160	263
American Milk Review	904	114
Milk Plant Monthly	571	61

READER PREFERENCE: Classified ads are placed mostly by readers and are unsolicited. They are, therefore, a good reflection of reader preference. Last year The Milk DEALER carried more classified ads than the other two milk industry publications combined.

MARKET SERVED: There are approximately 8,400 plants manufacturing ice cream, but less than 30% or 2,400 of the plants account for 90% of the annual output of almost 630 million gallons. The Ice Cream REVIEW reaches 90% of these important plants with PAID circulation. Ice cream industry capital expenditures exceed \$30 million annually, with purchases of raw materials and supplies in excess of \$400 million.

CIRCULATION: The Ice Cream REVIEW offers the highest PAID circulation in the history of ice cream trade papers — 8,520. Nation-wide coverage with 72% of the circulation concentrated in 15 states which produce 71% of the ice cream. Circulation increase in the last 10 years is a phenomenal 67%!

EDITORIAL COVERAGE: Editor Edward Thom, associated with The Ice Cream REVIEW for 27 years, and his staff of six keep in touch constantly with all possible sources of information on new methods in ice cream manufacturing, packaging and selling. They place strong emphasis on "how-to-do-it" feature articles. Typical of The Ice Cream REVIEW's timely editorial content is the outstanding series of articles entitled "Problems of the Soft Serve Operator." Readers have purchased more than 600 brochure reprints of this series up to date.

ADVERTISING LEADERSHIP: The Ice Cream REVIEW leads year after year in advertising volume. Here are the 1956 facts:

	Pages of Display Adv.	Pages of Exclusive Adv.
The Ice Cream REVIEW	893	187
The Ice Cream Trade Journal	850	102
Ice Cream Field	827	55

READER PREFERENCE: Classified ads reflect reader preference because they are placed unsolicited by readers. Last year The Ice Cream REVIEW carried almost twice as many classified ads as the other two ice cream trade papers combined.

SPECIAL PUBLICATION SERVICES for all The Dairy Industries UNIT publications include NEW PRODUCTS LISTINGS, LETTER TO JOBBERS, MARKET DATA, JOBBER LIST, MARKET AND PRODUCTION FACTS, COUNSEL WITH ADVERTISERS AND AGENCIES, and ACCURATE UP-TO-DATE MAILING LISTS.

phone long distance collect

for information on how The Dairy Industries UNIT can be your 3-way expressway to increased dairy industry sales.

in Milwaukee BRoadway 1-1135
in Chicago ENterprise 4788
in New York ENterprise 6435

INVALUABLE REFERENCE GUIDE



THE DAIRY INDUSTRIES CATALOG

Serving the industry since 1926 as a complete, concise catalog of all dairy equipment and supplies. Every year the CATALOG is distributed to over 17,000 "buying" personnel throughout the industry, serving them as a prime reference of buying information for YOUR products.

THE OLSEN PUBLISHING COMPANY

1445 North Fifth Street

Milwaukee 12, Wisconsin

Sell the \$5,400,000,000 Bakery Market through

THE MARKET: Retail value of all bakery foods exceed \$5,400,000,000 a year. It ranks 6th in size of all American industries. It is first in the food field in annual payroll and number of employees, and second in value of products. The long range trend is definitely up as measured by the consumption of flour used by bakers, which has more than doubled in the past 35 years. In the last 10 years alone there has been a 20% increase. This is due to a decline in home baking. Today 95% of bread is commercially baked. Fifty years ago it was just the reverse.

The demand for bakery foods is steadily increasing along with our expanding population.

About 85% of the sales are produced by wholesale bakeries and about 15% by individual retail bakeries. Latest census shows 6,103 wholesale bakeries and 19,034 retail establishments.

The market for ingredients and supplies amounts to over \$2,250,000,000 a year. The largest item is \$783,556,338 for flour, \$34,460,000 for butter and butter substitutes, \$229,606,000 for packaging, \$151,260,000 for fats and oils, \$226,000,000 for sugar. Similar huge amounts are spent on corn syrup, eggs, fruits, milk, malt extract, yeast, salt, etc.

Equally staggering is the market for equipment; \$32,750,000 for new structures and additions and over \$60,000,000 for machinery and equipment.

THE READERS: BAKING INDUSTRY Magazine gives you the largest paid ABC circulation—top coverage of

those who influence purchasing—those who represent 92% of the industry's buying power. These men are in top management, supervisory personnel, and key production men. An average of 4 men read each copy, giving you a total of 53,552 readers per issue. Thus your advertising reaches many buying influences your salesmen never see.

THE PUBLICATION: Rising costs make bakers efficiency-conscious—that's why they read BAKING INDUSTRY for money-making and money-saving ideas. As the first publication in the field, BAKING INDUSTRY has earned an outstanding reputation for editorial leadership and service. For example, it originated the industry's \$1,000,000 promotion program. It has won numerous awards for editorial excellence.

Through its editorial pages, bakers learn the HOWS and WHYS of successful methods of production, advertising and selling. Every issue is packed with industry news and business-getting ideas.

Besides its full-time staff of 5 editors and 7 contributing editors, there are 126 correspondents throughout U.S. and Canada to bring complete industry coverage to BAKING INDUSTRY readers.

1958 BAKERS' BUYING DIRECTORY: The original and most complete Buying Guide . . . kept and used by bakers throughout the year. Full coverage of all important buying factors in the U.S. and 40 foreign countries. Distribution 15,000. Closing date: Feb. 1, 1958.

BAKING INDUSTRY



- Largest Paid Circulation
- Oldest Bakery Magazine
- Best editorial coverage
- Largest advertising volume per issue
- Largest number of exclusive advertisers

BAKING INDUSTRY

105 W. ADAMS ST., CHICAGO 3, ILL.

SM S.I.C. Manufacture of Food & Kindred Products—(Cont'd)

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 20—(Continued)

S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)		S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)		
			1954 Cen- sus	SM Est. 1/1/57	1954 Cen- sus	SM Est. 1/1/57				1954 Cen- sus	SM Est. 1/1/57	1954 Cen- sus	SM Est. 1/1/57	
205	Bakery products						208	Beverages						
2061	Bread and related products	6,103	3,067	3,038	246.3	254.7	2081	Bottled soft drinks	4,643	1,113	1,204	91.6	93.9	
2062	Biscuit and crackers	311	757	784	44.8	44.2	2082	Beer and ale	301	1,857	1,987	81.3	80.0	
206	Sugar						2083	Malt	46	212	216	14.6	16.6	
2061	Raw cane sugar	49	65	71	3.0	3.0	2085	Distilled liquor	133	711	812	21.5	24.7	
2062	Cane-sugar refining	23	864	941	16.0	15.2	209	Miscellaneous Foods						
2063	Beet sugar	68	291	276	11.0	10.5	2091	Leavening compounds	43	74	72	2.6	2.5	
207	Candy and related products						2092	Shortening and cooking oils	102	935	1,010	9.3	10.8	
2071	Confectionery products	1,434	983	1,082	86.8	85.8	2093	Margarine	33	192	210	2.6	3.0	
2072	Chocolate and cocoa products	28	433	487	8.5	8.0	2094	Corn wet milling	58	468	449	13.6	13.0	
2073	Chewing gum	28	188	173	5.1	4.4	2095	Flavorings	550	446	485	10.6	10.5	
207							2097	Manufactured ice	1,963	143	151	20.9	22.1	
2071							2098	Macaroni and spaghetti	233	150	162	7.1	7.1	
2072							2099	Food preparations, n. e. c.	2,500	3,296	3,582	72.0	71.6	

Manufacture of Tobacco Products—S.I.C. 21

SM Estimates for 81 Counties with 97% of 1956 Employment

COUNTY and STATE	SM Employ- ment 1/1/57 (thous.)	No. of Plants 1954 Cen- sus												
Forsyth, N. C.	9.8	10	Lenoir, N. C.	4.0	5	Dinwiddie, Va.	2.3	4	Lancaster, Pa.	1.0	13	Orieans, La.	.8	2
Henrico, Va.	9.0	12	Luzerne, Pa.	3.9	9	York, Pa.	2.0	56	Hudson, N. J.	.9	1	Lehigh, Pa.	.7	4
Jefferson, Ky.	8.3	13	Naash, N. C.	3.5	3	Pittsylvania, Va.	1.5	6	Middlesex, N. J.	.9	3	St. Louis, Mo.	.7	8
Durham, N. C.	6.7	7	Robeson, N. C.	3.4	4	Lackawanna, Pa.	1.4	4	Ware, Ga.	.9	1	Fayette, Ky.	.7	8
Hillsborough, Fla.	5.3	38	Flockingham, N. C.	2.0	3	Charleston, S. C.	1.4	1	Gadsden, Fla.	.8	8	Wayne, N. C.	.7	1
Philadelphia, Pa.	4.6	21	Pitt, N. C.	2.4	5	Allen, Ohio	1.1	3	Cook, Ill.	.6	23	Ohio, W. Va.	.6	4

Manufacture of Tobacco Products—(Cont'd)

SM Estimates for 81 Counties with 97% of 1956 Employment—(Continued)

COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census
Camden, N. J.	.8	1	Dutchess, N. Y.	.3	1	Suffolk, Mass.	.2	9	Los Angeles, Cal.	.1	9	Milwaukee, Wis.	.1	8
Dallas, Ala.	.6	1	Northumberland, Pa.	.3	1	Essex, N. J.	.2	1	Cabell, W. Va.	.1	1	Martin, N. C.	.1	2
Mercer, N. J.	.6	2	Davidson, Tenn.	.3	1	Pinellas, Fla.	.2	1	Berks, Pa.	.1	4	Bourbon, Ky.	.1	1
Vanderburg, Ind.	.6	2	Wayne, Mich.	.3	3	Greene, Tenn.	.2	1	Hamilton, Ohio	.1	2	Wake, N. C.	.1	2
Wayne, Mich.	.6	6	Edgewood, N. C.	.3	2	Summer, Tenn.	.2	2	New Haven, Conn.	.1	12	Florence, S. C.	.1	2
Halifax, Va.	.5	4	Clinton, Ind.	.3	1	Johnston, N. C.	.1	1	Duval, Fla.	.1	2	Marion, S. C.	.1	2
Centre, Pa.	.5	1	Tenn.	.3	1	Lucas, Ohio	.1	2	Warren, Ky.	.1	3			
Granville, N. C.	.4	3	Montgomery,		3	Dauphin, Pa.	.1	1	Boyle, Ky.	.1	1	Total Above Counties	94.7	487
Guildford, N. C.	.4	2			3	Van Wert, Ohio	.1	1	Polk, Fla.	.1	3			
New York, N. Y.	.4	99	Queens, N. Y.	.2	3	Vance, N. C.	.1	1	Kings, N. Y.	.1	16			
Shelby, Tenn.	.4	2	Hillsborough,		3	Bexar, Tex.	.1	1	Houston, Ala.	.1	1	% of USA Total	97.1	76.6
Wilson, N. C.	.4	4	N. H.	.2	3	Hancock, Ohio	.1	1	Adams, Pa.	.1	3			

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 21

Although some overlap exists in the 4-digit breakdown of this industry, it is not as extensive as in most industries, and a total figure would have some significance. Here the 2-digit group (code number 21) shows \$3,362,000,000

value of products shipped for January 1, 1957—a gain of 5½%, or \$177,000,000, over the 1954 Census figure of \$3,185,000,000. Despite health scare publicity, cigarettes rose 7%, chewing and smoking tobacco dropped 9%.

S. I. C. Code Number	INDUSTRY	Gross Sales		Employment (thous.)	S. I. C. Code Number	INDUSTRY	Gross Sales		Employment (thous.)				
		No. of Plants (1954 Census)	Value Products Shipped (\$ million)				No. of Plants (1954 Census)	Value Products Shipped (\$ million)					
2111	Cigarettes	519	1,641	32.1	2131	Chewing and smoking tobacco	85	162	7.5				
2121	Cigars	410	339	33.6	2141	Tobacco stemming and redrying	133	1,043	6.7				

Manufacture of Textile Mill Products—S.I.C. 22

SM Estimates for 100 Counties with 71% of 1956 Employment

COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census
Philadelphia, Pa.	27.7	398	York, S. C.	10.6	24	Bergen, N. J.	6.7	85	Berkshire, Mass.	5.3	18
Providence, R. I.	26.9	275	sylvania, Va.	10.5	3	Cleveland, N. C.	6.4	28	Laurens, S. C.	5.3	11
Gaston, N. C.	24.4	102	Forsyth, N. C.	9.7	20	Montgomery, New York	6.2	14	New London, Conn.	5.3	42
Cabarrus, N. C.	21.5	26	Catawba, N. C.	8.9	112	N. Y.	5.9	10	Esex, Mass.	5.0	42
Greenville, S. C.	19.1	38	Troup, Ga.	8.8	11	Androscoggin, Me.	6.1	14	Tallapoosa, Ala.	5.0	8
Spartanburg, S. C.	18.9	37	Greenwood, S. C.	8.3	10	Rutherford, N. C.	5.9	19	Queens, N. Y.	4.9	188
Guildford, N. C.	18.6	69	Chambers, Ala.	8.0	9	Fairfield, Conn.	5.8	70	Cuyahoga, Ohio	4.9	33
Bristol, Mass.	18.5	125	McKinley, N. C.	7.4	52	Rowan, N. C.	8.7	14	Union, S. C.	4.9	10
Passaic, N. J.	18.1	312	Lancaster, Pa.	7.2	37	Rockingham, N. C.	8.7	16	Carter, Tenn.	4.8	4
Anderson, S. C.	14.8	35	Hillsborough, N. H.	7.1	46	Knox, Tenn.	5.7	10	Oconee, S. C.	4.7	7
Alamance, N. C.	13.4	84	Aiken, S. C.	5.6	3	Montgomery, Pa.	5.6	10	Norfolk, Mass.	4.7	90
Berks, Pa.	13.4	151	Fulton, Ga.	5.6	3	Upson, Ga.	4.6	98	Calhoun, Ala.	3.6	11
Middlesex, Mass.	12.4	99	Hudson, N. J.	5.5	31	Hartford, Conn.	4.4	14	Durham, N. C.	3.6	19
New York, N. Y.	12.0	714	Windham, Conn.	5.0	31	Stanly, N. C.	4.5	15	Cherokee, S. C.	3.6	11
Kings, N. Y.	12.0	459	Surry, N. C.	5.4	22	Hampden, Mass.	4.4	31	Richmond, Ga.	3.5	9
Worcester, Mass.	11.8	120	Walker, Ga.	5.7	8	York, Me.	4.3	7	Esex, N. J.	3.6	75
Muscogee, Ga.	11.2	14							Pickens, S. C.	3.6	11

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For Data on Specific Industrial Markets, see pages 152-159



Manufacture of Textile Mill Products—(Cont'd)

S.M. Estimates for 100 Counties with 71% of 1956 Employment

COUNTY and STATE	No. of Plants 1954 Cen-sus	COUNTY and STATE	No. of Plants 1954 Cen-sus	COUNTY and STATE	No. of Plants 1954 Cen-sus	COUNTY and STATE	No. of Plants 1954 Cen-sus	COUNTY and STATE	No. of Plants 1954 Cen-sus	COUNTY and STATE	No. of Plants 1954 Cen-sus
York, Pa.	3.4	33 McDowell, N. C.	3.2	24 Madison, Ala.	3.1	2 Tolland, Conn.	3.0	21			
Lehigh, Pa.	3.3	72 Los Angeles, Cal.	3.2	141 Richland, S. C.	3.0	3 Etowah, Ala.	3.0	2	Total Above Counties		
Hall, Ga.	3.3	8 Washington, R. I.	3.2	28 Randolph, N. C.	3.0	60 Newberry, S. C.	2.9	5		715.3	5,510
Davidson, N. C.	3.3	34 Caldwell, N. C.	3.1	19 Bibb, Ga.	3.0	13 Henry, Va.	2.9	11	% of USA Total	71.3	66.2
Orange, N. Y.	3.3	18 Lincoln, N. C.	3.1	15 Nash, N. C.	3.0	7					

S.M. Estimates, 1956, for 4-Digit Industries of S.I.C. 22

The comeback of wool is emphasized in the breakdown of the textile mill products figures. Scouring and combing plants (4-digit code 2211) rose 30%, yarn mills 18, woolen and worsted fabrics 36 and finishing wool textiles 35. The upswing reverses a long decline dating back to the introduction in the feminine fashion field of the form-flattering effects of the smoother, thinner synthetic fibers. Men's clothes also were affected by the synthetics, but their in-

creasing combinations with wool has helped the latter to rebound. In the carpet and rug field, the revival has been less strong, with wool carpets and rugs showing gains of 14% to synthetics' 20%. A gain of only 8% in synthetic broad-woven fabrics reflects a certain amount of over-expansion in their use in previous years. Many gains around 10% and under were posted with cotton broad-woven fabrics showing only a fair increase of about 6%.

S. I. C. Code Num- ber	INDUSTRY	Gross Sales				S. I. C. Code Num- ber	INDUSTRY	Gross Sales					
		No. of Plants (1954 Cen-sus)	Value Prod- ucts Shipped (\$ million)		Employment (thous.)			No. of Plants (1954 Cen-sus)	Value Prod- ucts Shipped (\$ million)		Employment (thous.)		
			1954 Cen-sus	S.M. Est. 1/1/57	1954 Cen-sus	S.M. Est. 1/1/57			1954 Cen-sus	S.M. Est. 1/1/57	1954 Cen-sus		
221	Woolen and worsted manufactures						2261	Finishing textiles, except wool	728	1,044	1,148	79.3	77.4
2211	Scouring and combing plants	74	94	122	7.0	6.8	227	Carpets and rugs					
2212	Yarn mills, wool, except carpet	171	252	297	17.8	16.7	2271	Wool carpets and rugs	90	420	478	30.1	29.8
2213	Woolen and worsted fabrics	343	890	1,211	62.5	60.8	2273	Carpets and rugs, except wool	213	175	210	11.5	11.8
2216	Finishing wool textiles	56	33	44	4.2	4.5	2274	Hard-surfaced floor coverings	16	162	203	9.6	9.1
222	Yarn and thread mills						228	Hats, except cloth and millinery					
2222	Yarn and throwing mills	137	99	106	11.0	9.9	2281	Fur-felt hats and hat bodies	91	71	75	8.2	7.7
2223	Thread mills	97	184	202	13.9	13.6	2282	Wool-felt hats and hat bodies	32	14	15	1.8	1.6
2224	Yarn mills, cotton system	387	1,031	1,113	86.2	82.2	2283	Straw hats	48	22	24	2.3	2.0
223	Broad woven fabrics						2284	Hatter's fur	30	10	11	.8	.8
2233	Cotton broad-woven fabrics	582	2,780	2,957	296.2	281.7	229	Miscellaneous textile goods					
2234	Synthetic broad-woven fabrics	575	1,143	1,234	90.0	88.8	2291	Felt goods, n. o. c.	72	93	98	6.0	5.8
2241	Narrow fabric mills	613	250	268	25.7	26.6	2292	Lace goods	138	60	66	7.4	8.2
225	Knitting mills						2293	Padding and upholstery filling	200	149	170	9.1	9.7
2251	Full-fashioned hosiery mills	789	52	474	60.2	57.9	2294	Processed textile waste	203	85	93	5.8	5.7
2252	Seamless hosiery mills	609	429	424	63.4	61.7	2295	Coated fabrics, except rubberized	106	212	243	0.5	0.5
2253	Knit outerwear mills	1,083	544	620	46.4	52.9	2296	Cordage and twine	137	160	178	12.3	12.2
2266	Knit fabric mills	340	376	422	16.8	16.3	2299	Textile goods, n. o. c.	108	121	132	9.0	8.8

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Do you have any pet gripes about the S.I.C. — weaknesses that you feel should be eliminated by a more minute breakdown of some classifications?

SALES MANAGEMENT will gladly serve as the "gathering agent" to present your criticisms and suggestions to the government in a *united* request for the overhaul of the problem parts of the S.I.C. structure. Write to the Editor, SALES MANAGEMENT Survey of Industrial Buying Power, 386 Fourth Avenue, New York 16, N. Y.

Manufacture of Apparel and Related Products—S.I.C. 23

SM Estimates for 100 Counties with 74% of 1956 Employment

COUNTY and STATE	No. of Employment 1/1/57 (thou.)	SM Plants 1954 Census	COUNTY and STATE	No. of Employment 1/1/57 (thou.)	SM Plants 1954 Census	COUNTY and STATE	No. of Employment 1/1/57 (thou.)	SM Plants 1954 Census	COUNTY and STATE	No. of Employment 1/1/57 (thou.)	SM Plants 1954 Census	COUNTY and STATE	No. of Employment 1/1/57 (thou.)	SM Plants 1954 Census
New York, N. Y.	240.2	1,716	Dallas, Tex.	7.9	170	Greenville, S. C.	4.4	19	Knox, Tenn.	2.8	14	Hartford, Conn.	1.0	42
Kings, N. Y.	57.4	2,217	San Francisco, Cal.	7.8	332	Dade, Fla.	4.3	187	Suffolk, N. Y.	2.7	92	Burlington, N. J.	1.0	24
Los Angeles, Cal.	45.3	1,628	Fulton, Ga.	7.4	85	El Paso, Tex.	4.2	14	Providence, R. I.	2.7	93	Harris, Tex.	1.0	56
Philadelphia, Pa.	40.3	908	Middlesex, N. J.	7.3	141	Randolph, N. C.	4.2	8	Carbon, Pa.	2.7	27	Lee, Miss.	1.0	8
Cook, Ill.	35.4	1,034	Fairfield, Conn.	6.8	134	Cumberland, N. J.	4.1	42	Henrico, Va.	2.6	27	Campbell, Va.	1.0	13
Suffolk, Mass.	20.0	660	Hamilton, Ohio	6.7	105	Hampden, Mass.	4.1	51	Lycoming, Pa.	2.6	17	Henry, Va.	1.0	4
Hudson, N. J.	18.0	905	New Haven, Conn.	6.6	154	Whitfield, Ga.	4.0	43	Graves, Ky.	2.6	3	Richmond, N. Y.	1.7	66
Bristol, Mass.	17.4	108	Westchester, N. Y.	6.4	226	Orange, N. Y.	4.0	60	Nassau, N. J.	2.5	109	Roanoke, Va.	1.7	8
Baltimore, Md.	16.7	294	Monmouth, N. J.	6.1	96	Milwaukee, Wis.	3.9	111	Ulster, N. Y.	2.5	58	Shelby, Tenn.	1.7	38
Luzerne, Pa.	15.7	197	Bergen, N. J.	5.8	279	Berks, Pa.	3.7	82	Franklin, Pa.	2.5	9	Carroll, Md.	1.7	11
St. Louis, Mo.	13.0	273	Middlesex, Mass.	5.6	136	Lebanon, Pa.	3.6	37	King, Wash.	2.4	88	Camden, N. J.	1.7	43
Bronx, N. Y.	12.6	572	Worcester, Mass.	5.2	93	Spartanburg, S. C.	3.6	8	Dutchess, N. Y.	2.2	44	Denver, Colo.	1.6	63
Queens, N. Y.	10.8	383	Union, N. J.	5.1	100	Davidson, N. C.	3.5	6	Multnomah, Ore.	2.2	54	Wicomico, Md.	1.6	17
Lackawanna, Pa.	10.4	146	Orleans, La.	5.1	87	Somerset, N. J.	3.5	20	Ramsey, Minn.	2.2	41	Total Above Counties	913.1	17,189
Schuylkill, Pa.	10.3	82	Hennepin, Minn.	5.1	112	Dauphin, Pa.	3.4	30	Monroe, Miss.	2.2	7	% of USA Total	73.6	54.9
Lehigh, Pa.	10.2	102	Rensselaer, N. Y.	5.0	36	Essex, Mass.	3.1	70	Marion, Ga.	2.2	5			
Northampton, Pa.	10.1	129	York, Pa.	4.9	58	Bucks, Pa.	3.0	33	Barrow, Ga.	2.2	12			
Passaic, N. J.	9.7	235	Montgomery, Pa.	4.0	70	Bexar, Tex.	3.0	45	Columbus, Pa.	2.1	23			
Guyahoga, Ohio	9.5	160	Wayne, Mich.	4.7	152	Erie, N. Y.	3.0	73	Covington, Ala.	2.1	6			
Monroe, N. Y.	9.5	39	Lancaster, Pa.	4.7	57	Gulford, N. C.	3.0	16	Davidson, Tenn.	2.1	18			
Essex, N. J.	9.4	311	Northumberland,			Atlantic, N. J.	2.9	57	Albany, N. Y.	2.0	31			
Jackson, Mo.	8.3	132	Pa.			Cambria, Pa.	2.8	13	Gloucester, N. J.	2.0	31			

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 23

A rather consistent rate of gain was shown by all the component industries in this overall group, ranging from 8% for suspenders and garters to 16% for work shirts and fabric work gloves. High employment, interest in gardening and do-it-yourself activities have stimulated the work

clothes field. The large majority of gains in both apparel and the not-elsewhere-classified group of fabricated textiles are over 10%. A good gain of 15% in house furnishings reflects the boom in home building as well as the upgrading of furnishings in older homes.

S. I. C. Code Number	INDUSTRY	Gross Sales			Employment (thous.)	S. I. C. Code Number	INDUSTRY	Gross Sales			Employment (thous.)				
		No. of Plants (1954 Census)	Value Products Shipped (\$ million)					1954 Census	SM Est.	1/1/57					
			1954 Census	SM Est.											
231	Men's and boys' suits and coats					2301	Millinery	871	173	100	20.2	17.6			
2311	Men's and boys' suits and coats	1,310	1,141	1,300	119.0	119.1									
2312	Suit and coat findings	116	28	37	2.7	2.7	2302	Children's outerwear							
232	Men's and boys' furnishings						2301	Children's dresses	764	292	328	32.6	33.1		
2321	Men's dress shirts and nightwear	971	894	1,029	108.3	115.7	2302	Children's coats	407	172	190	14.4	14.4		
2322	Men's and boys' underwear	82	74	83	9.4	9.7	2303	Children's outerwear, n. e. c.	812	278	309	30.6	30.5		
2323	Men's and boys' neckwear	403	100	112	9.5	10.0	2371	Fur goods	1,972	228	258	10.0	9.8		
2325	Men's and boys' cloth hats	415	57	64	8.1	8.5	2304	Miscellaneous apparel							
2326	Hat and cap materials	63	10	11	.9	1.0	2381	Fabric dress gloves	110	39	44	4.5	4.2		
2327	Separate trousers	793	398	481	81.7	86.8	2382	Fabric work gloves	130	66	76	10.1	11.0		
2328	Work shirts	52	38	44	7.0	8.0	2383	Suspenders and garters	47	10	11	.9	.8		
2329	Men's and boys' clothing, n. e. c.	1,117	783	904	90.6	93.6	2384	Belts and dressing gowns	328	106	119	11.0	11.2		
233	Women's and misses' outerwear						2385	Waterproof outer garments	294	126	134	12.9	12.2		
2331	Blouses	1,245	376	416	43.8	43.9	2386	Leather and sheep-lined clothing	153	56	62	5.4	5.5		
2333	Dresses, unit price	4,114	1,455	1,815	143.3	147.8	2387	Belts	503	106	118	12.6	12.7		
2334	Dresses, dozen price	892	435	483	54.5	53.1	2388	Handkerchiefs	100	46	44	3.8	3.7		
2337	Women's suits, coats, and skirts	3,204	1,261	1,413	98.8	100.8	2389	Apparel, n. e. c.	139	27	31	3.5	3.6		
2338	Women's neckwear and scarfs	133	27	30	1.7	1.8	2390	Fabricated textiles, n. e. c.							
2339	Women's outerwear, n. e. c.	710	252	282	25.4	24.3	2391	Curtains and draperies	716	173	193	14.0	14.7		
234	Women's undergarments						2392	House furnishings, n. e. c.	1,213	803	879	36.2	36.6		
2341	Women's and children's underwear	1,352	770	847	73.4	83.8	2393	Textile bags	280	221	247	12.1	13.0		
2342	Corsets and allied garments	491	394	442	38.8	42.3	2394	Canvas products	1,119	130	144	13.5	13.6		
							2395	Tucking, pleating, and stitching	491	38	39	6.5	6.4		

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Cross-Index of 4-digit industries by Product, S. I. C. # and Page Number on pages 12, 16 and 20.

SM S.I.C. Apparel and Related Products—(Cont'd)

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 23—(Continued)

S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)		S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)	
			1954 Cen- sus	SM Est. 1/1/57	1954 Cen- sus	SM Est. 1/1/57				1954 Cen- sus	SM Est. 1/1/57	1954 Cen- sus	SM Est. 1/1/57
2396	Trimmings and art goods	836	242	274	17.8	18.2	2398	Embroideries, except Schiffli	926	56	63	10.8	11.2
2397	Schiffli-machine embroideries	801	65	73	6.7	5.9	2399	Textile products, n. e. c.	1,104	201	221	18.0	18.1

Manufacture of Lumber & Wood Products—S.I.C. 24

SM Estimates for 100 Counties with 40% of 1956 Employment

COUNTY and STATE	SM No. of Plants 1/1/57 (thous.)	COUNTY and STATE												
Humboldt, Cal.	12.7	432	Somerset, Me.	3.1	185	Fulton, Ga.	1.9	74	Butte, Cal.	1.0	54	St. Louis, Mo.	1.4	80
Lane, Ore.	11.8	681	Shasta, Cal.	2.0	84	Norfolk, Va.	1.9	30	Ashley, Ark.	1.0	34	Philadelphia, Pa.	1.4	81
Douglas, Ore.	9.2	512	Penobscot, Me.	2.7	243	Wayne, Mich.	1.9	98	Orangeburg, S. C.	1.0	49	Umatilla, Ore.	1.4	28
Multnomah, Ore.	7.9	134	Lewis, Wash.	2.4	176	Kings, N. Y.	1.9	176	Benton, Ore.	1.0	123	Bonner, Idaho	1.4	46
Los Angeles, Cal.	7.7	487	Lincoln, Ore.	2.4	172	Chatham, Ga.	1.9	40	Washington, Ore.	1.0	128	Hennepin, Minn.	1.4	56
Cook, Ill.	7.0	307	Sonoma, Cal.	2.3	101	Dubuque, Iowa	1.9	13	Piscataqua, Me.	1.0	126	Curry, Ore.	1.4	115
Coos, Ore.	6.2	268	Del Norte, Cal.	2.2	70	New York N. Y.	1.8	229	Pulaski, Ark.	1.0	35	Mason, Wash.	1.4	66
Shelby, Tenn.	8.1	63	Tillamook, Ore.	2.2	151	Franklin, Me.	1.8	134	Queens, N. Y.	1.0	79	Lincoln, Mont.	1.3	69
Linn, Ore.	5.7	207	Rapides, La.	2.2	45	Baltimore, Md.	1.8	76	Marathon, Wisc.	1.0	33	Union, Ark.	1.3	37
King, Wash.	5.6	188	Clackamas, Ore.	2.2	210	Winnebago, Wisc.	1.7	12	Jefferson, Ala.	1.0	66	Bowie, Tex.	1.3	24
Mendocino, Cal.	5.8	235	Spokane, Wash.	2.2	65	Grafton, N. H.	1.7	83	Bibb, Ga.	1.5	31	Kent, Mich.	1.3	51
Grays Harbor, Wash.	5.8	155	Clallam, Wash.	2.2	99	Mobile, Ala.	1.7	13	Harris, Tex.	1.5	88	Yamhill, Ore.	1.3	121
Cowlitz, Wash.	8.2	120	Polk, Ore.	2.2	92	Tangipahoa, La.	1.7	29	Whatcom, Wash.	1.5	77	Dallas, Ala.	1.3	32
Pierce, Wash.	8.1	141	Nex Perce, Idaho	2.2	18	Iredell, N. C.	1.7	34	Montgomery, Ala.	1.5	79	Eacambia, Ala.	1.3	33
Snohomish, Wash.	6.0	168	Arouostok, Me.	2.2	139	Clearwater, Idaho	1.7	59	Angelina, Tex.	1.5	30	San Joaquin, Cal.	1.3	23
Jackson, Ore.	4.0	208	Floyd, Ind.	2.1	17	Kootenai, Idaho	1.7	53	Lee, N. C.	1.5	81	Hamilton, Tenn.	1.3	36
Siskiyou, Cal.	3.8	72	Josephine, Ore.	2.0	185	Clatsop, Ore.	1.7	66	Plumas, Cal.	1.4	35	Cumberland, Me.	1.2	114
Jefferson, Ky.	3.8	48	Bradley, Ark.	2.0	22	Missoula, Mont.	1.8	49	Skagit, Wash.	1.4	88	Total Above Counties.....	268.8	10,680
Klamath, Ore.	3.3	45	Tuscaloosa, Ala.	2.0	87	Lassen, Cal.	1.8	11	Idaho, Idaho	1.4	41			
Oxford, Me.	3.1	227	Marion, Ore.	1.9	134	Henrico, Va.	1.8	37	Wood, Wisc.	1.4	15			
						Columbia, Ore.	1.8	88	Catawba, N. C.	1.4	36	% of USA Total.....	40.0	26.7

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Manufacture of Lumber & Wood Products—(Cont'd)

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 24

The plywood industry's 36% gain in value of products shipped is tops for these 18 four-digit industries. The big increase must be credited to new uses of an improved plywood product made more desirable by further develop-

ment of effective glues. Though gains are fairly substantial throughout these industries, they are smallest in the wooden container 4-digit groups under code 244, which have felt the competition of metal, plastic and paper containers.

S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales		Employment (thous.)		S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales		Employment (thous.)			
			Value Prod- ucts Shipped (\$ million)		1954 Est. 1/1/57	SM				1954 Est. 1/1/57	SM	1954 Est. 1/1/57			
			1954 Cen- sus	SM	1954 Est. 1/1/57	SM				1954 Est. 1/1/57	SM	1954 Est. 1/1/57			
2411	Logging camps and contractors	12,866	733	807	78.8	83.1	244	Wooden containers	844	134	31	32	6.7	8.4	
2412	Lumber and basic products	19,778	3,247	3,637	321.2	327.2	2441	Fruit and vegetable baskets	2441	76	11	11	1.3	1.2	
2421	Sawmills and planing mills	261	121	132	12.8	12.3	2442	Rattan and willow ware	2442	23	0	0	1.1	1.1	
2422	Veneer mills	175	34	47	2.6	3.4	2443	Cigar boxes	2443	1,101	352	363	39.8	39.4	
2423	Shingle mills	205	27	27	3.4	2.9	2444	Wooden boxes	2444	180	60	62	3.7	3.2	
2424	Cooperage stocks mills	88	12	12	1.4	1.4	2445	Coverage	2445	240	Wood preserving	240	204	12.1	13.4
2425	Excelsior mills	88	12	12	1.4	1.4	2491	Lasts and related products	2491	51	12	13	1.8	1.8	
2431	Milwaukee plants	3,346	873	890	88.7	88.3	2492	Mirror and picture frames	2492	343	48	53	5.2	5.8	
2432	Plywood plants	255	618	700	39.2	50.4	2493	Wood products, n. o. c.	2493	2,103	330	358	38.8	38.3	
2433	Prefabricated wood products	231	224	255	11.8	10.6									

Manufacture of Furniture & Fixtures—S.I.C. 25

SM Estimates for 100 Counties with 70% of 1956 Employment

COUNTY and STATE	SM Employ- ment 1/1/57 (thous.)	No. of Plants 1954 Cen- sus	COUNTY and STATE	SM Employ- ment 1/1/57 (thous.)	No. of Plants 1954 Cen- sus										
Los Angeles, Cal.	20.2	984	Jefferson, Ky.	3.2	49	Allegheny, Pa.	1.7	83	Milwaukee, Wisc.	1.2	44	Hillsborough,			
Cook, Ill.	18.0	509	Queens, N. Y.	3.2	150	Hudson, N. J.	1.7	81	Saline, Ark.	1.2	3	T N. H.		.8	24
Kings, N. Y.	8.3	522	Fulton, Ga.	3.1	42	Multnomah, Ore.	1.7	82	Randolph, N. C.	1.2	16	Hambien, Tenn.		.8	13
Kent, Mich.	7.8	91	Dallas, Tex.	3.0	78	Hinds, Miss.	1.8	12	Poinsett, Ark.	1.2	1	Surry, N. C.		.8	6
New York, N. Y.	7.2	579	Shelby, Tenn.	3.0	80	Nassau, N. Y.	1.8	87	St. Joseph, Ind.	1.2	8	Luzerne, Pa.		.8	18
Caldwell, N. C.	8.7	17	San Francisco, Calif.	2.7	95	Winnebago, Ill.	1.8	22	Marien, Ind.	1.1	41	Chatham, N. O.		.8	4
Philadelphia, Pa.	5.4	249	Erie, N. Y.	2.8	39	Sheboygan, Wisc.	1.8	21	Essex, N. J.	1.1	98	Roanoke, Va.		.8	10
Davidson, N. C.	5.4	28	Harris, Tex.	2.8	77	Elkhart, Ind.	1.8	23	Columbiana, Ohio.	1.1	8	Jackson, Mo.		.8	82
Worcester, Mass.	6.4	98	Sebastian, Ark.	2.8	92	Lycoming, Pa.	1.4	31	La Porte, Ind.	1.1	10	Wabash, Ind.		.8	6
Chautauqua, N. Y.	6.2	42	Middlesex, Mass.	2.4	92	Monroe, N. Y.	1.4	16	Davidson, Tenn.	1.1	22	Bristol, Mass.		.8	24
St. Louis, Mo.	5.1	102	Wayne, Mich.	2.4	114	Wilkes, N. C.	1.4	28	Forsyth, N. C.	1.0	12	Broome, N. Y.		.8	4
Guildford, N. C.	4.8	109	Dubois, Ind.	2.4	28	Ottawa, Mich.	1.4	3	Washington, Va.	1.0	4	Montgomery, Pa.		.8	24
Cuyahoga, Ohio	4.4	112	Stark, Ohio	2.3	10	McDowell, N. C.	1.4	5	Oklahoma, Okla.	1.0	39	New Haven, Conn.		.8	48
Mahoning, Ohio	4.2	12	Iredell, N. C.	2.2	15	Perry, Ind.	1.4	4	Franklin, Ohio.	1.0	35	Floyd, Ind.		.8	6
Catawba, N. C.	4.0	85	Manitowoc, Wisc.	2.0	4	Pierce, Wash.	1.3	30	Carroll, Va.	1.0	5	Total Almre Counties			
Henry, Va.	4.0	13	Union, N. J.	2.0	39	Erie, Pa.	1.3	18	Sumter, S. C.	1.0	8	287.8	8,380		
Hamilton, Ohio	3.7	63	Tippocane, Ind.	2.0	3	Hennepin, Minn.	1.3	67	King, Wash.	1.0	74	% of USA Total		88.7	82.0
Kenosha, Wisc.	3.7	5	Suffolk, Mass.	1.9	128	Vanderburgh, Ind.	1.3	19	Shelby, Ind.	1.0	6				
Baltimore, Md.	3.6	88	Bronx, N. Y.	1.9	140	Hamilton, Tenn.	1.3	24	Tarrant, Tex.	1.0	41				
York, Pa.	3.6	43	Muskegon, Mich.	1.8	7	Campbell, Va.	1.2	93	Lackawanna, Pa.	.9	14				
Dade, Fla.	3.4	142	Alameda, Cal.	1.8	7	Gattington, N. Y.	1.2	10							
Kane, Ill.	3.3	23	St. Joseph, Mich.	1.8	7	Du Page, Ill.	1.2								

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The end result of most industrial production is the sale of products or services to consumers. For up-to-date basic data on consumers—in city, county, metropolitan area, state, regional and national markets—see SALES MANAGEMENT May 10 Survey of Buying Power.



Manufacture of Furniture & Fixtures—(Cont'd)

S.M. Estimates, 1956, for 4-Digit Industries of S.I.C. 25

All 15 of the component industries in this 2-digit classification showed fine gains, led percentagewise by professional furniture. Prosperity in the medical, dental, legal and other professions resulted in substantial expansion and

renovation and an excellent demand for professional furniture. The same is true of office and restaurant furniture. New homebuilding and high purchasing power brought gains of better than 15% to most of the household group.

S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)		S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)	
			1954 Cen- sus	S.M. Est. 1/1/57	1954 Cen- sus	S.M. Est. 1/1/57				1954 Cen- sus	S.M. Est. 1/1/57		
251	<i>Household furniture</i>												
2511	Wood furniture, not upholstered	2,785	1,113	1,274	124.9	134.0	2532	Professional furniture	102	66	78	6.5	6.5
2512	House furniture, upholstered	1,780	633	731	56.0	60.1	2541	Partitions and fixtures	1,826	387	457	33.1	38.8
2514	Metal house furniture	641	403	452	29.6	31.2	2550	<i>Screens, shades, and blinds</i>					
2515	Mattresses and bedsprings	1,195	465	525	32.1	33.1	2561	Window and door screens	215	71	84	4.4	4.7
2519	Household furniture, n. e. c.	89	16	19	1.3	1.4	2562	Window shades	196	84	72	4.4	4.5
252	<i>Office furniture</i>						2563	Venetian blinds	916	114	133	9.4	10.7
2521	Wood office furniture	112	53	61	5.5	6.4	2569	<i>Furniture and fixtures, n. e. c.</i>					
2522	Metal office furniture	120	293	240	16.1	18.9	2591	Restaurant furniture	163	37	39	3.4	3.6
255	<i>Public and professional furniture</i>						2599	Furniture and fixtures, n. e. c.	52	11	13	.8	.8
2531	Public-building furniture	292	160	187	14.0	16.1							

Manufacture of Paper & Allied Products—S.I.C. 26

S.M. Estimates for 100 Counties with 66% of 1956 Employment

COUNTY and STATE	S.M. No. of Plants 1/1/57 (thou.)													
Cook, Ill.	21.3	306	Butler, Ohio	7.7	19	Queens, N. Y.	6.3	64	Wayne, Mich.	4.0	43	Oswego, N. Y.	4.1	17
Los Angeles, Calif.	11.5	205	Hampden, Mass.	7.6	66	Baltimore, Md.	6.3	51	Milwaukee, Wisc.	4.5	40	Alameda, Cal.	3.5	36
Kings, N. Y.	9.5	232	Winnebago, Wisc.	7.5	22	Hamilton, Ohio	5.8	47	Cuyahoga, Ohio	4.5	48	Shelby, Tenn.	3.5	19
Philadelphia, Pa.	8.3	171	Ramey, Minn.	7.4	20	Chatham, Ga.	8.7	10	Wood, Wisc.	4.4	9	Monroe, Mich.	3.5	12
Kalamazoo, Mich.	9.0	26	Mobile, Ala.	6.6	16	Niagara, N. Y.	5.3	28	Penobscot, Me.	4.3	10	Essex, N. J.	3.5	71
New York, N. Y.	8.4	315	St. Louis, Mo.	6.4	70	Worcester, Mass.	5.1	47	Brown, Wisc.	4.3	19	Allegany, Md.	3.5	2
Middlesex, Mass.	8.1	73	Hudson, N. J.	8.4	72	Outagamie, Wisc.	5.0	22	Bergen, N. J.	4.2	38	Henrico, Va.	3.4	27

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Now! AVAILABLE FOR THE FIRST TIME...

A COMPLETE NATIONAL CENSUS OF COMMERCIAL STATIONERY, BUSINESS MACHINE AND OFFICE FURNITURE DEALERS

Under the sponsorship of OFFICE APPLIANCES, Indiana University's Bureau of Business Research, with the cooperation of the Bureau of Census, has produced the first complete retail census of the office supply and equipment industry. This exclusive report has been supplemented by extensive research in the field providing accurate case histories and other valuable market data.

Manufacture of Paper & Allied Products—(Cont'd)

SM Estimates for 100 Counties with 66% of 1956 Employment (Continued)

COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	No. of Plants 1954 Cen- sus												
Cumberland, Me.	3.4	9	Fulton, Ga.	2.8	23	Dallas, Tex.	2.2	20	New London, Conn.	1.9	15	Isle of Wight, Va.	1.6	3
Clark, Wash.	3.4	9	Morehouse, La.	2.7	6	Clackamas, Ore.	2.2	6	Berrien, Mich.	1.9	11	San Francisco, Cal.	1.6	31
Carlton, Minn.	3.4	4	Jefferson, La.	2.7	3	Bucks, Pa.	2.1	15	Jackson, Miss.	1.8	2	Camden, N. J.	1.6	11
Coos, N. H.	3.3	11	Cowlitz, Wash.	2.6	9	Adams, Miss.	2.1	3	Contra Costa, Cal.	1.8	13	Total Above Counties	376.8	3,225
Saratoga, N. Y.	3.1	21	Ousachita, La.	2.6	8	Chester, Pa.	2.1	10	Bronx, N. Y.	1.8	45	% of USA Total	68.4	64.7
Snohomish, Wash.	3.0	7	Erie, Pa.	2.6	9	Georgetown, S. C.	2.0	4	Washington, N. Y.	1.7	15			
Harris, Tex.	3.0	16	Erie, N. Y.	2.6	32	Ouachita, Ark.	2.0	6	Rockland, N. Y.	1.7	4			
Oxford, Me.	3.0	4	New Haven, Conn.	2.5	28	Duval, Fla.	2.0	12	Hamilton, Tenn.	1.7	7			
Kennebec, Me.	3.0	10	Allegheny, Pa.	2.5	26	Middlesex, N. J.	2.0	21	Bay, Fla.	1.7	3			
Washington, La.	3.0	5	York, Pa.	2.4	21	Wayne, Ohio	1.9	5	Passaic, N. J.	1.7	40			
Montgomery, Ohio	2.9	18	Essex, Mass.	2.4	27	Blair, Pa.	1.9	8	Monroe, N. Y.	1.7	36			
Marathon, Wis.	2.9	8	Delaware, Pa.	2.4	11	Darlington, S. C.	1.9	4	Providence, R. I.	1.7	39			
Berkshire, Mass.	2.9	19	Jefferson, N. Y.	2.4	21	Koochiching, Minn.	1.9	4	Putnam, Fla.	1.7	3			
Ross, Ohio	2.9	4	Marion, Ind.	2.3	21	Strafford, N. H.	1.9	5	Warren, N. J.	1.8	6			
Eufaula, Ala.	2.9	7	Suffolk, Mass.	2.3	87	Hartford, Conn.	1.9	27	Union, N. J.	1.8	27			
Jones, Miss.	2.8	4	Montgomery, Pa.	2.3	17									

Estimates, 1956, for 4-Digit Industries of S.I.C. 26

This industry in all of its phases has grown substantially in recent years, stimulated by the development of stronger and cleaner paper fibers, superior paperboard and containers, and a business boom which carried through paper

cartons, printing paper, writing paper, etc. Gains were quite consistent throughout the industry, with the majority of the 12 segments posting increases ranging upward from 20%.

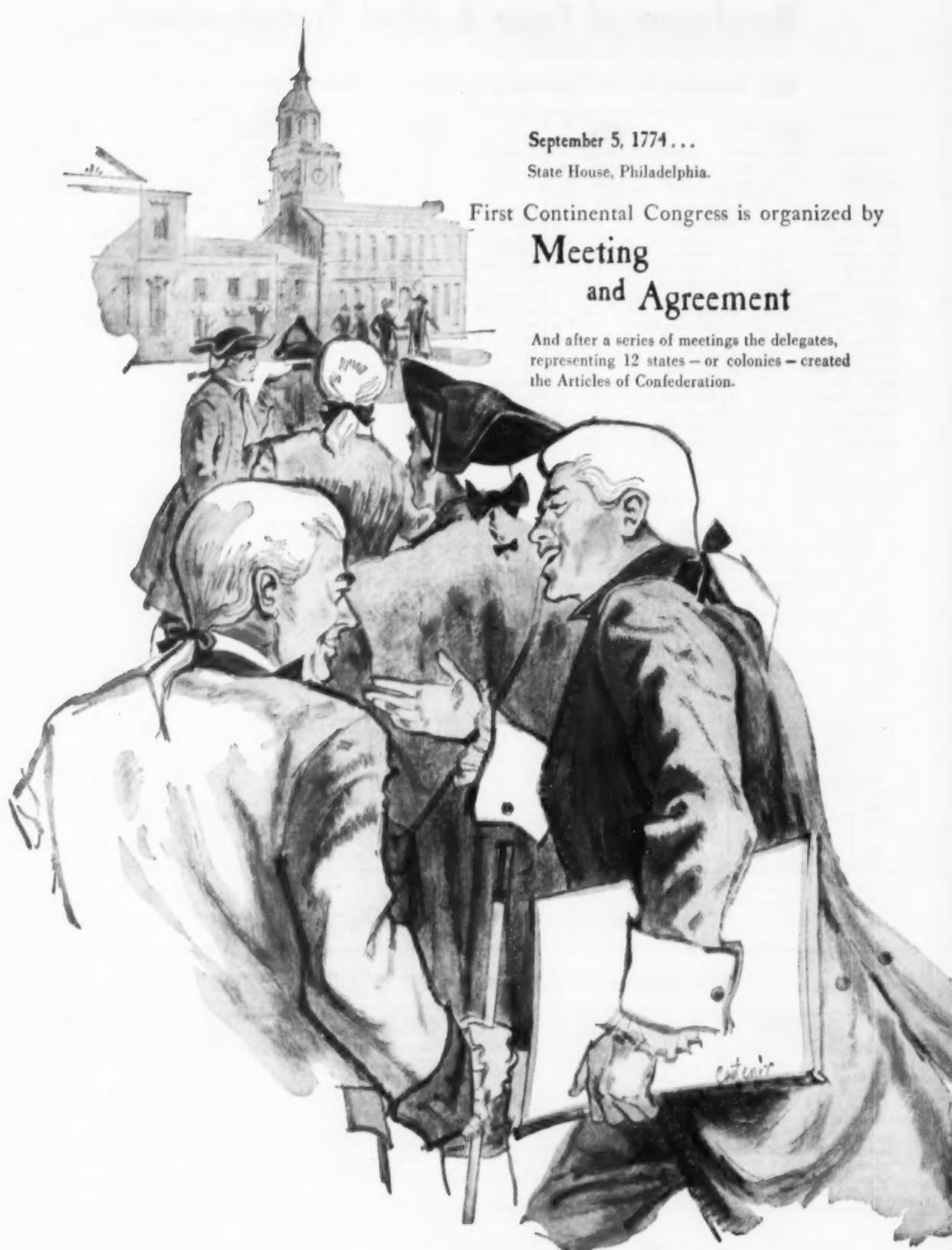
S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)	Employment (thous.)		S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)	Employment (thous.)		
				1954 Cen- sus	SM Est. 1/1/57					1954 Cen- sus	SM Est. 1/1/57	
261	Pulp, paper and board						2674	Fiber cans, tubes, drums, etc.	184	147	176	12.1
2611	Pulp mills	282	1,577	1,766	57.7	58.1						13.1
2612	Paper and paper board mills	589	3,797	4,574	142.2	156.4	269	Pulp, paper & board products, n.e.c.	352	207	260	12.3
2613	Building paper and board mills	91	305	354	16.4	17.8	2691	Die-cut paper and board	76	40	44	3.6
2641	Paper coating and glazing	277	622	738	27.7	30.4	2693	Wall paper	43	42	52	4.6
2651	Envelopes	196	195	234	15.9	17.9	2694	Pulp goods, pressed and molded	873	1,428	1,786	73.2
2661	Paper bags	381	823	741	33.3	36.6	2699	Paper and board products, n. e. c.				
267	Paperboard containers											
2671	Paperboard boxes	1,704	2,180	2,615	133.0	160.7						

Printing and Publishing—S.I.C. 27

SM Estimates for 100 Counties with 74% of 1956 Employment

COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)												
New York, N. Y.	112.1	3,765	Wayne, Mich.	14.2	508	San Francisco, Cal.	10.6	395	Jackson, Mo.	7.8	224	Westchester, N. Y.	5.9
Cook, Ill.	77.7	1,866	Cuyahoga, Ohio	13.4	446	Milwaukee, Wis.	10.3	264	Allegheny, Pa.	7.6	281	Dallas, Tex.	8.8
Los Angeles, Calif.	30.0	1,318	Hamilton, Ohio	11.9	277	Ramsey, Minn.	9.4	110	Kings, N. Y.	6.5	384	Marion, Ind.	5.4
Philadelphia, Pa.	29.9	874	St. Louis, Mo.	11.8	403	Baltimore, Md.	9.3	250	Hennepin, Minn.	8.8	282	Middlesex, Mass.	5.1
Suffolk, Mass.	17.3	477	Washington, D. C.	10.9	246	Montgomery, Ohio	8.7	86	Nassau, N. Y.	8.2	150	Jefferson, Ky.	5.1
													109

See page 149 for Data on 76 Industries with 1956 Sales of \$1 Billion or More



September 5, 1774 . . .

State House, Philadelphia.

First Continental Congress is organized by
Meeting
and Agreement

And after a series of meetings the delegates,
representing 12 states — or colonies — created
the Articles of Confederation.





Where Advertisers and Agencies Meet and Agree

10:42 A.M. Tuesday, July 9, 1957 . . . plans room of national advertiser and his agency.

Objective: reviewing progress in markets of yesterday . . . and . . . planning strategies and emphasis on markets of tomorrow. *Where* is the market . . . *which* markets need special cultivation . . . *what* is the potential . . . *how* have others done it?

The guide: the one authority equally accepted by government and industry, contact and media,

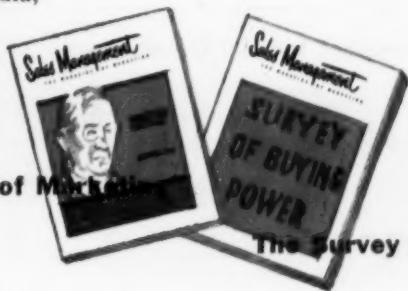
sales management and research, distributor and salesman.

Reputations for such reliability and authority are earned only by consistent year-in-year-out performance. This responsibility is not lightly held.

Sales Management magazine provides more information on markets throughout each year than any magazine published.

Sales Management

The Magazine of Marketing





Printing and Publishing—(Cont'd)

S.M. Estimates for 100 Counties with 74% of 1956 Employment—(Continued)

COUNTY and STATE	S.M. No. of Plants Employment 1/1/57 (thou.)	COUNTY and STATE	S.M. No. of Plants Employment 1954 Cen- sus	COUNTY and STATE	S.M. No. of Plants Employment 1954 Cen- sus	COUNTY and STATE	S.M. No. of Plants Employment 1/1/57 (thou.)	COUNTY and STATE	S.M. No. of Plants Employment 1954 Cen- sus	COUNTY and STATE	S.M. No. of Plants Employment 1/1/57 (thou.)	COUNTY and STATE	S.M. No. of Plants Employment 1954 Cen- sus	
Queens, N. Y.	5.1	189	Worcester, Mass.	2.3	110	Kent, Mich.	2.2	101	Sullivan, Tenn.	1.7	11	Schenectady, N. Y.	1.3	19
Erie, N. Y.	5.1	188	Davidson, Tenn.	3.3	86	Bexar, Tex.	2.2	83	Norfolk, Mass.	1.8	81	Winnebago, Wisc.	1.2	32
Essex, N. J.	8.0	285	Albany, N. Y.	3.2	62	Jefferson, Ala.	2.2	73	Durham, N. C.	1.6	21	Merrimack, N. H.	1.2	37
Monroe, N. Y.	4.8	136	Dade, Fla.	3.0	181	Oklahoma, Okla.	2.2	80	Kane, Ill.	1.6	40	Sacramento, Calif.	1.2	38
Hudson, N. J.	4.7	95	Multnomah, Ore.	3.0	152	York, Pa.	2.4	53	Montgomery, Ind.	1.6	7	Essex, Mass.	1.2	91
Fulton, Ga.	4.6	158	Lucas, Ohio	2.8	87	Shawnee, Kan.	2.1	40	Salt Lake, Utah	1.5	72	Northampton, Pa.	1.2	36
Fairfield, Conn.	4.6	131	Henrico, Va.	2.8	104	Sedgwick, Kan.	2.1	40	Will, Ill.	1.5	24	Lake, Ill.	1.2	39
Franklin, Ohio	4.3	118	Bronx, N. Y.	2.7	104	Onondaga, N. Y.	2.1	79	Lake, Ind.	1.5	39	Broome, N. Y.	1.1	30
New Haven, Conn.	4.2	136	Clark, Ohio	2.7	20	Dutchess, N. Y.	2.0	25	Tulsa, Okla.	1.4	68			
Alameda, Cal.	4.2	139	Bergen, N. J.	2.6	145	Tarrant, Tex.	2.0	101	Dauphin, Pa.	1.4	36	Total Above Counties		
Harris, Tex.	4.1	173	Union, N. J.	2.6	78	Douglas, Neb.	2.0	84	Summit, Ohio	1.4	81	Counties	630.2	19,410
Polk, Iowa	4.1	77	Niagara, N. Y.	2.6	24	Shelby, Tenn.	2.0	74	Mecklenberg,			% of USA Total	73.6	89.6
Hampden, Mass.	4.1	106	Passaic, N. J.	2.4	102	Racine, Wis.	1.9	21	N. C.	1.4	48			
Denver, Colo.	3.9	163	Orleans, La.	2.4	126	Delaware, Pa.	1.8	49	Bristol, Mass.	1.4	56			
King, Wash.	3.7	190	Middlesex, N. J.	2.3	38	Santa Clara, Calif.	1.7	72	Duval, Fla.	1.4	83			
Hartford, Conn.	3.7	117	San Diego, Calif.	2.3	99	Sedgwick, Kan.	1.7	60	Maricopa, Ariz.	1.3	74			
Providence, R. I.	3.3	129	Lackawanna, Pa.	2.3	44	Lancaster, Pa.	1.7	47	Stark, Ohio	1.3	49			

S.M. Estimates, 1956, for 4-Digit Industries of S.I.C. 27

Census figures for 1954 were not complete for each segment of this industry, so estimates were made for 1954 value of products shipped in book printing, bookbinding, blank books and paper ruling, miscellaneous bookbinding work and engraving and plate printing. These figures represent an average of estimates made by a group of authorities in this field, and while they are not official figures, we

believe them to be the soundest obtainable. They are published in the interest of presenting as comprehensive a grouping of industries as possible in this Survey of Industrial Buying Power. The figures for the remaining industries in this particular 4-digit table are official. A good level of prosperity is shown in these industries, with most of the gains over 13%.

S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)	S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)		
			1954 Cen- sus	S.M. Est. 1/1/57					1954 Cen- sus	S.M. Est. 1/1/57			
2711	Newspapers	8,646	3,091	3,431	281.8	203.4	278	Bookbinding and related industries					
2721	Periodicals	2,045	1,441	1,614	62.4	65.2	2781	Bookbinding	730	112	123	17.2	19.0
2731	Books	814	665	748	34.7	35.6	2782	Blankbooks and paper ruling	334	79	91	8.6	9.7
2732	Books: publishing & printing	508	221	249	22.7	26.3	2783	Loose-lead binders and devices	154	79	88	8.2	8.8
2741	Book printing	946	231	262	18.4	18.4	2789	Miscellaneous bookbinding work	201	22	25	3.3	3.7
2751	Miscellaneous publishing	12,073	2,202	2,525	200.2	214.7	279	Printing trades services					
2761	Commercial printing	2,924	983	1,087	77.7	80.3	2791	Typeetting	1,081	121	136	14.6	14.8
2771	Lithographing	294	209	238	21.3	21.3	2792	Engraving and plate printing	567	60	68	7.5	7.7
	Greeting cards						2793	Photoengraving	891	173	197	17.7	18.9
								Electrotyping and stereotyping	233	86	100	8.0	8.3

Manufacture of Chemicals & Allied Products—S.I.C. 28

S.M. Estimates for 100 Counties with 72% of 1956 Employment

COUNTY and STATE	S.M. No. of Plants Employment 1/1/57 (thou.)	COUNTY and STATE	S.M. No. of Plants Employment 1/1/57 (thou.)	COUNTY and STATE	S.M. No. of Plants Employment 1/1/57 (thou.)	COUNTY and STATE	S.M. No. of Plants Employment 1/1/57 (thou.)	COUNTY and STATE	S.M. No. of Plants Employment 1/1/57 (thou.)	COUNTY and STATE	S.M. No. of Plants Employment 1/1/57 (thou.)			
Cook, Ill.	28.8	873	Philadelphia, Pa.	17.7	276	Middlesex, N. J.	14.3	88	Hudson, N. J.	12.8	186	St. Louis, Mo.	12.6	201
Los Angeles, Calif.	18.0	681	Wayne, Mich.	16.8	189	Kanawha, W. Va.	13.1	17	Aiken, S. C.	12.7	4	Hamilton, Ohio	12.5	99

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the direct route—without detours

Plastics Technology drives your sales message direct and undiluted to the plastics engineer—the man best suited by training and experience to understand the full significance of your advertising message. Time, money and manpower are spent in preparing the facts that sell. Why gamble on how others will interpret these facts when passing them on to the man you must influence?

Plastics Technology is edited for this man, the *plastics engineer*. Its editorial policy is to place the reader in a frame of mind to improve processing techniques, initiate new applications for both old and new materials, and plan for over-all improvement of his company and himself.

Write for our folder, "What Plastics Engineers have to Say," as well as the circulation analysis showing our powerful coverage of the plastics processors.

PLASTICS TECHNOLOGY

The Magazine of Applied Engineering
386 Fourth Avenue, New York 16, N.Y.



SIC Chemicals & Allied Products—(Cont'd)

SIC Estimates for 100 Counties with 72% of 1956 Employment—(Continued)

COUNTY and STATE	No. of Plants 1/1/57 (thou.)	SIC No. COUNTY and STATE	No. of Plants 1954 Census	SIC No. COUNTY and STATE	No. of Plants 1954 Census	SIC No. COUNTY and STATE	No. of Plants 1954 Census	SIC No. COUNTY and STATE	No. of Plants 1954 Census	SIC No. COUNTY and STATE	No. of Plants 1954 Census
Kings, N. Y.	11.8	311 Clark, Ind.	6.6	8 Queens, N. Y.	3.8	134 Summit, Ohio	2.6	22 Mobile, Ala.	2.0	18	
Union, N. J.	11.7	84 Bernallie, N. M.	6.0	3 Lake, Ill.	3.7	19 Wood, W. Va.	2.6	4 Talladega, Ala.	2.0	5	
Essex, N. J.	11.3	207 Allegheny, Pa.	5.9	88 Henry, Va.	3.3	3 Millin, Pa.	2.6	2 Giles, Va.	1.9	1	
Anderson, Tenn.	11.2	1 Lake, Ohio.	5.9	17 Lake, Ind.	3.3	23 Norfolk, Va.	2.6	28 York, S. C.	1.9	3	
Sullivan, Tenn.	11.0	8 Middlesex, Mass.	5.9	135 Allegany, Md.	3.3	2 Spotsylvania, Va.	2.6	1 Putnam, W. Va.	1.9	7	
Midland, Mich.	10.3	4 Rockland, N. Y.	5.6	9 Fairfield, Conn.	3.2	54 Roanoke, Va.	2.5	11 Vigo, Ind.	1.9	10	
Niagara, N. Y.	9.9	31 St. Clair, Ill.	5.2	18 Buncombe, N. C.	3.1	7 Delaware, Pa.	2.6	23 Franklin, Ohio	1.8	47	
Benton, Wash.	9.7	2 Hamilton, Tenn.	5.2	21 Contra Costa, Cal.	3.1	27 Dallas, Tex.	2.4	86 Mercer, N. J.	1.8	15	
Cuyahoga, Ohio	9.8	221 Escambia, Fla.	4.7	8 Augusta, Va.	3.1	4 Fulton, Ga.	2.4	80 Clark, Nev.	1.8	3	
Baltimore, Md.	9.3	130 Will, Ill.	4.7	9 Prince George, Va.	3.1	3 Floyd, Ga.	2.4	4 Bronx, N. Y.	1.7	58	
Erie, N. Y.	9.2	95 Passaic, N. J.	4.6	78 Kalamazoo, Mich.	3.1	18 Calcasieu, La.	2.3	10 Kerashaw, S. C.	1.7	2	
Harris, Tex.	8.8	105 Johnson, Kan.	4.6	4 Sussex, Del.	3.1	13 San Francisco, Cal.	2.3	95 Total Above Counties			
Marion, Ind.	8.4	63 Shelby, Tenn.	4.6	63 Hampden, Mass.	3.0	28 Wyandotte, Kan.	2.3	24	586.8	6,037	
Salem, N. J.	8.0	4 Bergen, N. J.	4.4	101 New Haven, Conn.	3.0	28 Morris, N. J.	2.2	21			
New York, N. Y.	7.9	293 Onondaga, N. Y.	4.2	26 Bucks, Pa.	3.0	17 Orange, Tex.	2.2	4			
East Baton Rouge, La.	7.3	14 Somerset, N. J.	4.2	10 Pike, Ohio.	2.6	72 Saline, Ark.	2.2	2			
Jefferson, Ky.	7.0	66 Galveston, Tex.	4.0	8 Milwaukee, Wisc.	2.6	1 Rensselaer, N. Y.	2.0	11			
Brazoria, Tex.	6.8	5 New Castle, Del.	4.0	21 Westchester, N. Y.	2.7	71 Warren, Va.	2.0	3			
Davidson, Tenn.	6.6	29 Chesterfield, Va.	3.9	8 Sauk, Wisc.	2.7	2 Jefferson, La.	2.0	11			

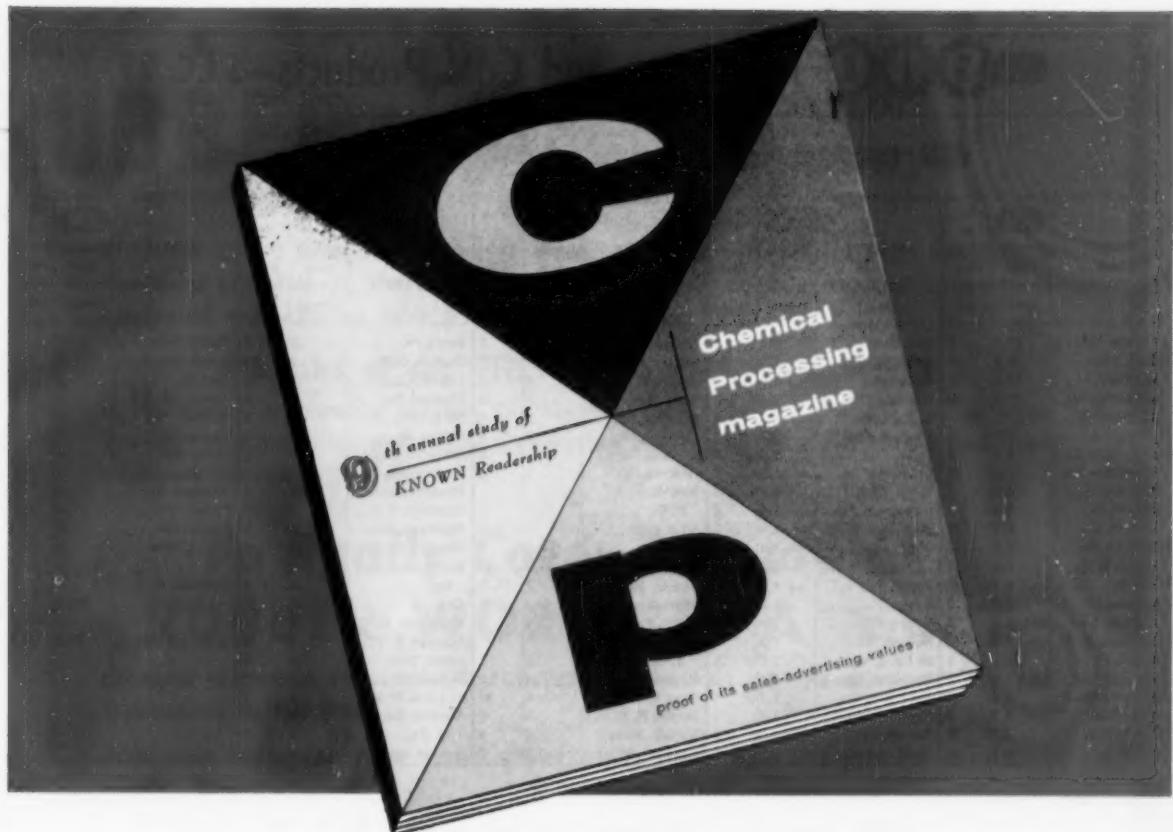
SIC Estimates, 1956, for 4-Digit Industries of S.I.C. 28

This is one of the largest industries, with 37 four-digit breakdowns. The range of gains is exceptionally wide, from 2% for soap and glycerin to 90% for synthetic rubber. Under private interest stimulation, synthetic rubber—a relatively new industry of recent decades—has mushroomed into extensive use, by the transportation industry, general industry and consumer goods. Plastics materials (code 2823) showed a fine gain of more than 30%. For a more complete picture of the plastics situation, the miscellaneous manufactures group (code 39) must also be seen,

inasmuch as plastics products not-elsewhere-classified are carried under code 3971.

In the absence of 1954 Census figures, value of products shipped for biological products and pharmaceutical preparations under code 283 has been estimated for 1954, as described on page 70, and for hardwood distillation, soft wood distillation, gum naval stores and tanning and dyeing materials under code 286. 1954 value of products shipped for codes 2871, 2872, 2892, and 2898 has also been estimated.

S. I.C. Code Number	INDUSTRY	No. of Plants (1954 Census)	Gross Sales		Employment (thous.)		S. I.C. Code Number	INDUSTRY	No. of Plants (1954 Census)	Gross Sales		Employment (thous.)	
			Value Products Shipped (\$ million)		1954 Census	SIC Est. 1/1/57				1954 Census	SIC Est. 1/1/57	1954 Census	SIC Est. 1/1/57
281	Inorganic chemicals						286	Gum and wood chemicals					
2811	Sulfuric acid	47	139	184	3.8	8.9	2881	Hardwood distillation	34	18	18	1.6	1.7
2812	Alkalies and chlorine	29	400	480	20.4	26.9	2882	Softwood distillation	27	89	100	4.4	4.9
2819	Inorganic chemicals, n. s. c.	442	1,888	2,231	97.0	105.4	2883	Gum naval stores	26	25	27	.8	.5
282	Organic chemicals						2885	Tanning and dyeing materials	30	14	15	.7	.7
2821	Cyclic (coal-tar) crudes	43	77	106	1.8	2.3	2887	Fertilizers					
2822	Intermediate coal-tar products	107	716	930	32.7	38.5	2871	Fertilizers	290	833	864	19.7	19.5
2823	Plastic materials	206	1,231	1,712	41.1	43.8	2872	Fertilizers, mixing only	880	329	348	12.0	12.3
2824	Synthetic rubber	21	303	686	8.8	14.3	288	Vegetable and animal oils					
2825	Synthetic fibers	48	1,241	1,481	81.1	87.2	2881	Cottonseed oil mills	286	546	588	13.7	13.1
2826	Explosives	74	390	487	32.5	41.3	2883	Soybean oil mills	88	626	928	8.9	7.0
2829	Organic chemicals, n. s. c.	275	2,199	2,832	87.5	87.9	2884	Vegetable oil mills, n. s. c.	81	186	188	2.8	2.8
283	Drugs and medicines						2888	Grease and tallow	800	223	268	11.8	12.6
2831	Biological products	93	81	72	4.0	4.3	2890	Chemical products, n. s. c.					
2834	Pharmaceutical preparations	1,163	1,643	1,880	78.6	78.8	2891	Printing ink	271	181	205	7.8	8.9
284	Soap and related products						2892	Essential oils	37	21	28	.8	.7
2841	Soap and glycerin	280	900	979	25.8	27.4	2893	Toilet preparations	710	629	722	24.8	25.4
2842	Cleaning and polishing products	1,151	880	888	18.0	18.9	2894	Gum and gelatin	230	139	148	6.8	7.8
2843	Sulfonated oils and assistants	103	83	66	2.4	2.6	2895	Carbon black	47	102	110	3.4	4.2
285	Paints and allied products						2896	Compressed and liquefied gases	428	168	206	10.4	12.9
2851	Paints and varnishes	1,469	1,494	1,829	56.8	62.1	2897	Insecticides and fungicides	265	175	187	6.8	6.8
2852	Inorganic color pigments	104	371	408	12.2	10.7	2898	Salt	38	72	74	4.0	3.4
2853	Whiting and fillers	98	24	28	1.2	1.3	2899	Chemical products, n. s. c.	1,204	631	637	21.4	28.2



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S I C Petroleum and Coal Products—S.I.C. 29

S.M. Estimates for 100 Counties with 94% of 1956 Employment

COUNTY and STATE	S.M. Employ- ment 1/1/57 (thou.)	No. of Plants 1954 Cen- sus	COUNTY and STATE	S.M. Employ- ment 1/1/57 (thou.)	No. of Plants 1954 Cen- sus									
Jefferson, Tex.	17.8	9	Kay, Okla.	2.2	2	St. Clair, Ill.	.9	3	Bucks, Pa.	.5	2	Pueblo, Colo.	.3	1
Harris, Tex.	13.8	21	Jefferson, Ala.	2.2	10	Salt Lake, Utah	.8	8	Garfield, Okla.	.8	1	Cattaraugus, N. Y.	.3	1
Lake, Ind.	11.8	11	Dallas, Tex.	2.1	8	Brooke, W. Va.	.8	1	Jefferson, La.	.5	6	Lake, Ill.	.3	2
Los Angeles, Cal.	11.5	80	Hamilton, Ohio	2.1	7	Utah, Utah	.8	3	Chatham, Ga.	.8	7	Providence, R. I.	.3	4
East Baton Rouge, La.	7.2	4	Jackson, Mo.	2.1	5	Crawford, Ill.	.8	1	Stark, Ohio	.8	6	Warren, Pa.	.3	3
Contra Costa, Cal.	7.1	6	Stephens, Okla.	2.0	2	Lawrence, Ill.	.8	3	Mobile, Ala.	.5	2	Freano, Cal.	.3	3
Philadelphia, Pa.	7.0	21	Tulsa, Okla.	2.0	7	McKean, Pa.	.7	4	Sedgwick, Kan.	.4	2	Davis, Utah	.3	3
Delaware, Pa.	6.8	3	Union, Ark.	1.7	7	Cambria, Pa.	.7	4	Northampton, Pa.	.4	3	Rock Island, Ill.	.3	1
Madison, Ill.	6.1	7	EI Paso, Tex.	1.6	2	New Hanover,	4	N. C.	Montgomery, Pa.	.4	4	Jefferson, Ky.	.3	2
Union, N. J.	5.7	12	Hutchinson, Tex.	1.6	4	Allen, Ohio	.7	1	Somerset, N. J.	.4	4	Carbon, Wyo.	.3	1
Allegheny, Pa.	5.2	17	Middlesex, N. J.	1.4	3	Caddo, La.	.7	5	Oklahoma, Okla.	.4	8	Marien, Ind.	.3	8
Hudson, N. J.	4.8	13	Natrona, Wyo.	1.4	3	Yellowstone,	11	Montgomery, Kan.	San Bernardino,	.4	3	Licking, Ohio	.3	3
Cook, Ill.	4.2	55	Middlesex, Mass.	1.3	10	King, N. Y.	.7	1	Cal.,	.4	4	Total Above Counties	203.1	742
Calcasieu, La.	3.8	4	Butler, Kan.	1.3	5	Carlton, Minn.	.7	9	Esex, N. J.	.4	13			
Guyahoga, Ohio	3.8	36	Beaver, Pa.	1.3	4	Milwaukee, Wisc.	.6	4	Wyandotte, Kan.	.4	6			
Gloucester, N. J.	3.5	4	Venango, Pa.	1.2	7	Butler, Pa.	.6	4	Allegany, N. Y.	.4	2	% of USA Total...	93.5	51.4
Will, Ill.	3.1	8	Nuttall, Tex.	1.2	28	Mont.	.6	3	Lorain, Ohio	.4	1			
Galveston, Tex.	3.0	4	St. Louis, Mo.	1.2	2	Hancock, W. Va.	.6	2	Ramsey, Minn.	.4	9			
Baltimore, Md.	2.9	13	Mahoning, Ohio	1.1	1	Kerr, Cal.	.6	10	St. Louis, Minn.	.4	3			
Lucas, Ohio	2.7	8	Boyd, Ky.	1.1	2	Borgen, N. J.	.6	3	Alameda, Cal.	.3	9			
Wayne, Mich.	2.7	35	Tarrant, Tex.	1.0	9	Norfolk, Mass.	.6	6	York, Pa.	.3	7			
Erie, N. Y.	2.6	10	St. Charles, La.	.9	2	Kanawha, W. Va.	.5	5	Orleans, La.	.3	2			

S.M. Estimates, 1956, for 4-Digit Industries of S.I.C. 29

The major part of this 6-segment industry is the huge, \$11,757,000,000 petroleum-refining category, where the growing demand for transportation oils and gas, as well as for power and home-heating oils, produced a 14% gain.

Coke ovens recorded a healthy rise of 20%, reflecting heavy demand from a booming steel industry, while paving mixtures and blocks—up 17%—mirrored the rise in road-building.

S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)	S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)		
			1954 Cen- sus	S.M. Est. 1/1/57					1954 Cen- sus	S.M. Est. 1/1/57			
2911	Petroleum refining	406	11,757	13,391	153.1	152.9	295	Paving and roofing materials	326	126	147	4.4	4.6
295	Coke and by-products						2951	Paving mixtures and blocks	401	433	15.7	16.1	
2931	Beehive coke ovens	40	9	10	.8	.8	2952	Roofing felts and coatings	197				
2932	By-product coke ovens	70	1,241	1,480	31.9	31.8	299	Petroleum and coal products, n. e. c.	283	224	247	8.2	8.8
							2992	Lubricants, n. e. c.	47	56	71	2.0	2.3
							2999	Petroleum and coal prod., n. e. c.					

Manufacture of Rubber Products—S.I.C. 30

S.M. Estimates for 100 Counties with 91% of 1956 Employment

COUNTY and STATE	S.M. Employ- ment 1/1/57 (thou.)	No. of Plants 1954 Cen- sus												
Summit, Ohio	48.9	47	Montgomery, Ohio	7.7	7	St. Joseph, Ind.	5.2	5	Mercer, N. J.	4.3	14	Eau Claire, Wisc.	3.4	1
Los Angeles, Cal.	15.8	133	Wayne, Mich.	7.5	20	Montgomery, Pa.	5.1	8	Providence, R. I.	4.1	12	Hampden, Mass.	3.3	8
Middlesex, Mass.	10.3	29	Cook, Ill.	6.5	76	Denver, Colo.	4.9	4	Shelby, Tenn.	4.1	8	Norfolk, Mass.	3.2	17
New Haven, Conn.	8.9	20	Passaic, N. J.	5.4	14	Bristol, Mass.	4.4	9	Erie, N. Y.	3.5	12	Etowah, Ala.	3.2	1

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Sales Management

THE MAGAZINE OF MARKETING
New York Chicago Santa Barbara

SM SIC Manufacture of Rubber Products—(Cont'd)

SM Estimates for 100 Counties with 91% of 1956 Employment—(Continued)

COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	
Polk, Iowa	3.2	Shawnee, Kan.	1.8	Westmoreland, Pa.	1.8	Wayne, Ohio	.7	3	Cumberland, Pa.	.4	1	De Kalb, Ill.	.4	2
Fairfield, Conn.	3.1	Orange, Cal.	1.4	Essex, Mass.	1.0	Essex, N. J.	.7	19	Wexford, Mich.	.4	1	Hennepin, Minn.	.7	15
Philadelphia, Pa.	2.8	Mt. Lennan, Tex.	1.4	Cuyahoga, Ohio	1.0	Kings, N. Y.	.8	31	Harris, Tex.	.4	1	Hayward, N. C.	1.0	1
Richland, Ohio	2.4	Erie, Pa.	1.3	Medina, Ohio	.9	New Castle, Del.	.8	3	Cecil, Md.	.4	1	Alameda, Cal.	.9	21
Marion, Ind.	2.4	Ottawa, Okla.	1.3	Portage, Ohio	.8	Kent, Mich.	.8	8	Chester, Pa.	.4	3	Tuscaloosa, Ala.	1.2	8
Allegheny, Md.	2.3	Ashland, Ohio	1.3	Queens, N. Y.	.8	Worcester, Mass.	.8	7	Cass, Ind.	.4	1	Rock Island, Ill.	1.2	1
Auglaize, Ohio	2.2	Portage, Ohio	1.2	Adams, Miss.	.8	Dutchess, N. Y.	.8	3	Contra Costa, Cal.	.4	1	La Crosse, Wisc.	.8	1
Allen, Ind.	2.1	Tuscaloosa, Ala.	1.2	Lancaster, Neb.	.8	Delaware, Ind.	.8	2	St. Clair, Ill.	.4	2	Bristol, R. I.	1.2	4
Hancock, Ohio	1.9	Rock Island, Ill.	1.2	Carroll, Md.	.7	Ottawa, Ohio	.8	1	Butler, Pa.	.3	1	Colbert, Ala.	.8	2
Broome, N. Y.	1.8	Geauga, Ohio	1.2	Winona, Minn.	.7	Bucks, Pa.	.8	8	Hudson, N. J.	.3	11	Tippecanoe, Ind.	.8	1
Baltimore, Md.	1.8	Bristol, R. I.	1.2	Carroll, Md.	.7	Camden, N. J.	.8	4	Total Above Counties	247.4	861	Middlesex, Conn.	.7	4
Lake, Ohio	1.7	Jackson, Mich.	1.2	Winona, Minn.	.7	Marion, Me.	.8	1	% of USA Total	90.9	86.4	Gibson, Tenn.	.7	1
Stark, Ohio	1.6	Gibson, Tenn.	1.2	Carroll, Md.	.7	Huron, Ohio	.8	4				Suffolk, Mass.	1.1	16
Wabash, Ind.	1.6	Suffolk, Mass.	1.1	Winona, Minn.	.7	Crawford, Ohio	.8	2				Eikhart, Ind.	1.1	10
Harford, Md.	1.6	Eikhart, Ind.	1.1	Winona, Minn.	.7	Lee, Iowa	.8	1				Mahoning, Ohio	1.1	5
Morris, N. J.	1.5	Mahoning, Ohio	1.1	Winona, Minn.	.7	Sandusky, Ohio	.4	2				Hamilton, Ind.	1.0	5
Hamilton, Ind.	1.5	Oakland, Mich.	1.0	Winona, Minn.	.7									

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 30

All four of the sub-groupings of this industry show strong gains, led by tires and inner tubes—whose 18% increase is tied to excellent car sales and replacement de-

mand. Next in order are reclaimed rubber and rubber industries not elsewhere classified, each up 15%, and rubber footwear, up 13%.

S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Census)	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)	[S. I. C. Code Number]	INDUSTRY	No. of Plants (1954 Census)	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)	
			1954 Census	SM Est. 1/1/57					1954 Census	SM Est. 1/1/57		
3011	Tires and inner tubes	49	1,842	2,173	92.7	3031	Reclaimed rubber	20	39	44	3.0	3.2
3021	Rubber footwear	22	166	197	18.3	3089	Rubber industries, n. e. c.	1,315	1,677	1,928	132.5	144.8

Manufacture of Leather and Leather Products—S.I.C. 31

SM Estimates, 1956, for 100 Counties with 77% of 1956 Employment

COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SM No. of Plants 1/1/57 (thou.)
Essex, Mass.	24.0	Philadelphia, Pa.	5.3	Berks, Pa.	2.0	Adams, Pa.	1.8	7	Bergen, N. J.	1.1	17
New York N.Y.	20.2	Los Angeles, Cal.	4.6	Norfolk, Mass.	2.0	Davidson, Tenn.	1.8	12	Dodge, Wisc.	1.0	4
Broome, N. Y.	13.7	Strafford, N. H.	3.8	New Castle, Del.	2.0	Baltimore, Md.	1.4	1	Cumberland, Pa.	1.0	4
Middlesex, Mass.	11.4	Essex, N. J.	3.8	Penobscot, Me.	2.0	Sheboygan, Wisc.	1.4	9	Cayuga, N. Y.	1.0	5
St. Louis, Mo.	9.9	Rockingham, N. H.	3.2	Dauphin, Pa.	2.0	Blair, Pa.	1.4	4	Wayne, Mich.	1.0	13
Plymouth, Mass.	8.7	N. H.	3.2	York, Pa.	1.9	Rock, Wisc.	1.4	2	Middlesex, N. J.	1.0	16
Hillsborough, N. H.	8.7	Scioto, Ohio	3.2	Kennebec, Me.	1.9	Cape Girardeau, Mo.	1.4	2	Lackawanna, Pa.	1.0	5
Cook, Ill.	8.8	Franklin, Mo.	3.0	Hamilton, Ohio	1.8	Mo.	1.4	2	Tioga, Pa.	1.0	2
Kings, N. Y.	8.1	Lancaster, Pa.	2.9	21	Fairfield, Conn.	1.4	23	Lycoming, Pa.	1.0	9	
Androscoggin, Me.	7.4	Campbell, Va.	2.9	Denver, Colo.	1.8	Saline, Me.	1.4	3	Hayward, N. C.	1.0	3
Suffolk, Mass.	6.7	York, Me.	2.8	14	Orange, N. Y.	1.8	26	Marion, Mo.	1.2	3	
Worcester, Mass.	6.7	Somerset, Me.	2.8	8	Herkimer, N. Y.	1.8	12	Oxford, Me.	1.2	6	
Milwaukee, Wisc.	6.3	Queens, N. Y.	2.8	33	Hudson, N. J.	1.7	34	Grafton, N. H.	1.2	7	
Fulton, N. Y.	5.8	Franklin, Ohio	2.1	14	Bronx, N. Y.	1.7	37	Gwinnett, Ga.	1.1	8	
				17	Bristol, Mass.	1.6	10	Lebanon, Pa.	.9	8	
								Merrimack, N. H.	.9	7	

For Specialized Studies of Specific Industrial Markets, see pages 152-159

Leather and Leather Products—(Cont'd)

SM Estimates for 100 Counties with 77% of 1956 Employment

COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census		
Goodhue, Minn.	.9	5	Jackson, Mo.	.8	8	Jefferson, Wisc.	.7	4	Cooke, Tex.	.7	3	Franklin, N. Y.	.8	0		
Camden, N. J.	.8	8	Santa Clara, Cal.	.8	1	Richland, Ill.	.7	1	Madison, Ill.	.7	2					
New London, Conn.	.8	12	Monroe, N. Y.	.8	17	Washington, Md.	.7	6	Jefferson, Me.	.7	1	Total Above Counties				
Onondaga, N. Y.	.8	4	Washington, Wisc.	.7	5	Gales, Ill.	.7	4	Randolph, Ill.	.7	2	279.8	3,708			
Ottawa, Mich.	.8	3	Lohig, Pa.	.7	5	San Mateo, Cal.	.7	9	Union, N. J.	.8	12	% of USA Total	77.4	76.8		
Randolph, Mo.	.8	1	Hampshire, Mass.	.7	3	St. Francois, Mo.	.7	3	Hampden, Mass.	.8	8					
			Callaway, Mo.	.7	2	Jackson, Ill.	.7	1	Scott, Mo.	.8	2					

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 20

The creditable job done by the leather industry in battling competition from synthetic materials is attested by the good gains of the four-digit groupings, which range from 7% for luggage to 14% for industrial leather belting.

Majority of gains are over 12%, with even saddlery, harness and whips rising 13% from the low 1954 base, spurred by the mounting popularity of horse racing and horseback riding.

S. I. C. Code Number	INDUSTRY	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)		S. I. C. Code Number	INDUSTRY	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)			
		1954 Census	SM Est. 1/1/57	1954 Census	SM Est. 1/1/57			1954 Census	SM Est. 1/1/57	1954 Census	SM Est. 1/1/57		
3111	Leather tanning and finishing	570	700	791	43.5	44.1	3152	Leather work gloves	96	18	20	2.8	2.8
3121	Industrial leather belting	130	62	71	4.8	4.7	3161	Luggage	497	180	180	15.8	16.7
3131	Footwear cut stock	563	240	275	20.1	21.8	3177	Purses and small leather goods					
314	Footwear, except rubber						3171	Handbags and purses	714	180	200	22.9	23.0
3141	Footwear, except rubber	1,196	1,781	2,041	219.4	218.2	3172	Small leather goods	260	57	63	6.7	6.4
3142	House slippers	173	90	102	10.9	11.3	3180	Miscellaneous leather goods					
315	Leather gloves						3192	Saddlery, harness, and whips	106	10	11	1.3	1.6
3151	Leather dress gloves	143	28	31	4.4	5.2	3199	Leather goods, n. e. c.	383	40	46	4.6	5.4

Manufacture of Stone, Clay & Glass Products—S.I.C. 32

SM Estimates for 100 Counties with 58% of 1956 Employment

COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Census
Los Angeles, Cal.	19.2	829	St. Louis, Mo.	4.8	98	Lawrence, Pa.	3.3	22	Audrain, Me.	2.8	7	Grant, Ind.	2.0	7
Cook, Ill.	12.3	320	Westmoreland, Pa.	4.8	41	Stark, Ohio	3.3	38	Harris, Tex.	2.3	88	Wood, W. Va.	2.0	8
Alliegheny, Pa.	10.0	115	Muskingum, Ohio	4.7	26	Alameda, Calif.	3.3	36	Onondaga, N. Y.	2.3	19	Providence, R. I.	1.9	35
Wayne, Mich.	8.2	142	Fairfield, Ohio	4.8	12	Jefferson, Ala.	3.3	48	Jefferson, Pa.	2.3	8	Fairfield, Conn.	1.9	23
Cumberland, N. J.	8.1	48	Montgomery, Pa.	4.4	86	Madison, Ill.	3.2	17	Cabell, W. Va.	2.2	18	Oklmulgee, Okla.	1.8	8
Steuben, N. Y.	7.9	7	Erie, N. Y.	4.3	73	Heward, Ind.	3.2	5	New York, N. Y.	2.1	198	Lancaster, Pa.	1.8	28
La Salle, Ill.	8.8	23	Harrison, W. Va.	4.1	12	Middlesex, N. J.	3.2	41	Wyandotte, Kan.	2.1	14	Seneca, Ohio	1.8	13
Wood, Ohio	6.8	14	Tuscarawas, Ohio	4.0	38	Kings, N. Y.	3.2	182	Mahoning, Ohio	2.1	33	Marion, W. Va.	1.8	8
Washington, Pa.	5.8	28	Northampton, Pa.	4.0	46	Kanawha, W. Va.	3.1	15	Fayette, Pa.	2.1	15	Monroe, Ind.	1.8	28
Baltimore, Md.	8.8	54	Columbiana, Ohio	3.8	40	Albany, N. Y.	3.0	17	Beaver, Pa.	2.1	31	Santa Clara, Cal.	1.7	24
Mercer, N. J.	5.8	47	Licking, Ohio	3.6	11	Lake, Ind.	2.7	34	Lake, Ill.	2.1	18	Clearfield, Pa.	1.7	18
Niagara, N. Y.	5.4	13	Cuyahoga, Ohio	3.6	98	Hamilton, Tenn.	2.7	16	Jefferson, Mo.	2.0	5	Summit, Ohio	1.7	30
Worcester, Mass.	8.2	30	Franklin, Ohio	3.8	47	Hudson, N. J.	2.8	38	Washington, Vt.	2.0	93	San Bernardino, Calif.	1.7	48
Armstrong, Pa.	8.1	19	Somerset, N. J.	3.8	18	Lucas, Ohio	2.8	33	Orleans, La.	2.0	28	Cal.	1.7	81
Hancock, W. Va.	5.8	12	Philadelphia, Pa.	3.4	98	Delaware, Ind.	2.8	10	Wayne, N. Y.	2.0	4	Hamilton, Ohio	1.7	81



Manufacture of Stone, Clay, Glass Products—(Cont'd)

SIC Estimates for 100 Counties with 58% of 1956 Employment—(Continued)

COUNTY and STATE	SIC No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	
Knox, Tenn.	1.7	28 Riverside, Calif.	1.4	29 Richmond, Ga.	1.4	7 Queens, N. Y.	1.3	82 Alpena, Mich.	1.2	6		
Lawrence, Ind.	1.7	10 Perry, Ohio	1.4	14 Webster, Iowa	1.4	10 Centre, Pa.	1.3	11				
Middlesex, Mass.	1.6	54 King, Wash.	1.4	50 Calhoun, Mich.	1.4	9 Huntingdon, Pa.	1.3	8	Total Above Counties		320.2	3,131
Rutland, Vt.	1.5	28 Salem, N. J.	1.4	5 Ottawa, Ohio	1.3	11 Guerneville, Ohio	1.2	6				
Dade, Fla.	1.5	88 Genesee, N. Y.	1.4	4 Chemung, N. Y.	1.3	5 Knox, Ohio	1.2	2				
Lehigh, Pa.	1.5	33 McKean, Pa.	1.4	9 Jefferson, Ky.	1.3	33 Madison, Ind.	1.2	10	% of USA Total		58.3	27.9
Dallas, Tex.	1.6	60										

SIC Estimates, 1956, for 4-Digit Industries of S.I.C. 32

Some of the best gains of all appear in this 24-segment industry. The explanation lies in new uses for finer glass, clay and stone and prosperous conditions in the building and house furnishing fields. Many of the gains are 20%

and higher, the range being from 5% for pressed and blown glass n.e.c. to 28% for clay refractories. 1954 value of products shipped for codes 3253, 3272, and 3274 is estimated. (See explanation on page 70.)

S. I. C. Code Num- ber	INDUSTRY	Gross Sales Value Prod- ucts Shipped (\$ million)			Employment (thous.)		S. I. C. Code Num- ber	INDUSTRY	Gross Sales Value Prod- ucts Shipped (\$ million)			Employment (thous.)	
		No. of Plants (1954 Cen- sus)	1954 Cen- sus	SIC Est. 1/1/57	1954 Cen- sus	SIC Est. 1/1/57			No. of Plants (1954 Cen- sus)	1954 Cen- sus	SIC Est. 1/1/57	1954 Cen- sus	SIC Est. 1/1/57
3211	Flat glass	32	371	483	24.6	29.3	3282	Vitreous-china food utensils	34	44	48	8.7	8.4
3212	Pressed and blown glassware						3283	Earthenware, food utensils	47	68	75	13.3	14.2
3221	Glass containers	85	638	724	49.4	57.0	3289	Pottery products, n. e. c.	654	57	67	9.8	10.4
3228	Pressed and blown glass, n. e. c.	287	412	433	41.9	41.2	3277	Concrete and plaster products	5,090	736	891	60.4	71.8
3231	Products of purchased glass	850	372	391	21.6	23.7	3272	Gypsum products	90	282	338	11.0	12.7
3241	Cement, hydraulic	162	811	967	39.8	41.8	3274	Lime	145	109	127	8.0	9.6
3251	Structural clay products						3275	Mineral wool	85	157	188	10.2	10.8
3251	Brick and hollow tile	610	250	300	32.4	35.0	3281	Cut-stone and stone products	977	184	230	21.6	22.5
3283	Floor and wall tile	49	97	118	11.3	13.0	3289	Non-metallic mineral products, n.e.c.					
3264	Sewer pipe	86	74	92	9.6	11.2	3292	Asbestos products	110	346	414	22.0	25.4
3286	Clay refractories	177	136	175	14.8	17.4	3293	Gaskets and asbestos insulations	237	183	181	12.8	15.7
3286	Structural clay products, n. e. c.	151	36	45	8.0	8.0	3295	Minerals: ground or treated	383	149	184	7.7	8.5
3287	Pottery and related products						3297	Nonclay refractories	77	131	164	8.8	10.3
3261	Vitreous plumbing fixtures	37	116	140	8.2	9.9	3299	Non-metallic mineral prod., n. e. c.	121	56	65	4.5	5.6

Manufacture of Primary Metal Industries—S.I.C. 33

SIC Estimates for 100 Counties with 82% of 1956 Employment

COUNTY and STATE	SIC No. of Plants 1/1/57 (thou.)	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	COUNTY and STATE	SIC No. of Plants 1954 Cen- sus	
Allegheny, Pa.	88.0	100 Beaver, Pa.	31.6	30 Milwaukee, Wisc.	17.4	89 Washington, Pa.	9.5	9 Montgomery, Pa.	7.8	30		
Lake, Ind.	64.9	31 Mahoning, Ohio	28.7	30 Westmoreland, Pa.	17.3	39 Jefferson, Ohio	9.1	6 Fairfield, Conn.	7.8	67		
Cook, Ill.	57.5	309 Jefferson, Ala.	26.1	45 Cambria, Pa.	18.0	5 Saginaw, Mich.	8.9	9 Blount, Tenn.	7.5	4		
Cuyahoga, Ohio	44.3	187 Northampton, Pa.	26.8	7 New Haven, Conn.	14.9	68 Worcester, Mass.	8.8	49 Middlesex, N. J.	7.4	25		
Wayne, Mich.	42.3	201 Los Angeles, Calif.	24.6	382 Madison, Ill.	14.5	18 Mercer, Pa.	8.7	16 Butler, Ohio	7.3	13		
Baltimore, Md.	35.8	38 Trumbull, Ohio	22.6	25 Lorain, Ohio	12.9	18 Dauphin, Pa.	8.3	8 Berks, Pa.	6.7	38		
Erie, N. Y.	35.5	63 Stark, Ohio	22.2	38 Hancock, W. Va.	9.8	2 Bucks, Pa.	7.9	13 Chester, Pa.	6.7	12		



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3. Iron Age	6,254	8. Machine Design 3,080
4. American Machinist	6,245	9. Foundry 2,374
5. Steel	6,069	10. Metal Progress 2,294
6. Product Engineering	4,393	11. Materials & Methods 1,976

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THE DAILY BUSINESS NEWSPAPER OF THE STEEL AND METAL INDUSTRIES



Manufacture of Primary Metals—(Cont'd)

S.M. Estimates of 100 Counties with 82% of 1956 Employment—(Continued)

COUNTY and STATE	<i>S.M.</i> Employ- ment 1/1/57	No. of Plants 1954 (thou.)	COUNTY and STATE	<i>S.M.</i> Employ- ment 1/1/57	No. of Plants 1954 (thou.)	COUNTY and STATE	<i>S.M.</i> Employ- ment 1/1/57	No. of Plants 1954 (thou.)	COUNTY and STATE	<i>S.M.</i> Employ- ment 1/1/57	No. of Plants 1954 (thou.)	COUNTY and STATE	<i>S.M.</i> Employ- ment 1/1/57	No. of Plants 1954 (thou.)
Burlington, N. J.	6.7	9	Utah, Utah	6.9	6	Hamilton, Tenn.	3.7	17	Hamilton, Ohio	3.1	44	Chautauque, N. Y.	2.6	5
San Bernardino, Cal.	6.7	8	Etowah, Ala.	6.2	9	Boyd, Ky.	3.7	3	Weatchester, N. Y.	3.1	16	Peoria, Ill.	2.6	8
Niagara, N. Y.	6.5	16	Providence, R. I.	5.1	63	Calhoun, Ala.	3.7	12	Kings, N. Y.	3.0	88	King, Wash.	2.5	41
Pueblo, Colo.	6.5	4	Essex, N. J.	4.7	82	Salt Lake, Utah	3.5	1	Montgomery, Ohio	3.0	32	Racine, Wisc.	2.5	23
Spokane, Wash.	6.4	8	Contra Costa, Cal.	4.7	6	Albany, N. Y.	3.4	8	Scott, Iowa	3.0	10	Will, Ill.	2.5	12
Lucus, Ohio	6.2	31	Henry, Ind.	4.5	3	Berrien, Mich.	3.4	22	St. Bernard, La.	3.0	1	Grant, Ind.	2.4	10
Philadelphia, Pa.	6.1	83	Muskegon, Mich.	4.3	18	New Castle, Del.	3.3	7	Delaware, Pa.	2.6	16	Lawrence, Ind.	2.4	2
Oneida, N. Y.	6.0	15	Hudson, N. J.	4.3	43	Lawrence, Pa.	3.2	6	Franklin, Ohio	2.6	23	Total Above Counties	1,024.5	3,369
Harris, Tex.	5.9	46	Erie, Pa.	4.2	28	Cabell, W. Va.	3.2	4	Allen, Ind.	2.8	13			
Onondaga, N. Y.	5.8	31	Alameda, Cal.	4.2	61	Multnomah, Ore.	3.2	43	Hampden, Mass.	2.7	30			
St. Lawrence, N. Y.	5.8	4	Union, N. J.	4.1	40	St. Louis, Minn.	3.2	9	Hartford, Conn.	2.7	38	% of USA Total	82.4	89.9
Jackson, Mo.	5.8	31	Scioto, Ohio	4.1	4	Colbert, Ala.	3.2	3	Lake, Ill.	2.7	9			
St. Louis, Mo.	5.6	54	Butler, Pa.	3.9	9	St. Clair, Ill.	3.2	16	Bergen, N. J.	2.7	24			
			Lebanon, Pa.	3.7	11	Heward, Ind.	3.2	11	Maricopa, Ariz.	2.6	8			

S.M. Estimates, 1956, for 4-Digit Industries of S.I.C. 33

Virtually all 19 of the component industries in this classification show exceptional gains, led by aluminum rolling and drawing's 42% and electrometallurgical products' 35%. Fast-growing uses for these products, stimulated by

fine promotional effort, helped to develop these substantial gains. 1954 value of products shipped for codes 3331, 3332, 3333, 3339, 3341 and 3393 is estimated. (See explanation on page 70.)

S. I. C. Code Num- ber	INDUSTRY	Gross Sales			S. I. C. Code Num- ber	INDUSTRY	Gross Sales				
		No. of Plants (1954 Cen- sus)	Value Prod- ucts Shipped (\$ million)	Employment (thous.)			No. of Plants (1954 Cen- sus)	Value Prod- ucts Shipped (\$ million)	Employment (thous.)		
331	Blast furnaces and steel mills				3339	Primary non-ferrous metals, n. e. c.	27	234	287	5.8	5.2
3312	Blast furnaces and steel mills	289	10,890	14,187	3341	Secondary non-ferrous metals	380	725	819	15.8	17.0
3313	Electrometallurgical products	31	272	367	335	Non-ferrous rolling and drawing					
332	Iron and steel foundries				3351	Copper rolling and drawing	89	1,320	1,585	41.9	41.8
3321	Gray-iron foundries	1,414	1,419	1,810	3352	Aluminum rolling and drawing	94	874	1,242	36.8	40.9
3322	Malleable-iron foundries	81	212	265	3359	Rolling and drawing, n. e. c.	98	801	378	10.4	12.2
3323	Steel foundries	239	836	884	3361	Non-ferrous foundries	1,920	874	1,127	73.5	78.8
333	Primary non-ferrous metals				3359	Primary metal industries, n. e. c.					
3331	Primary copper	27	743	938	3361	Iron and steel forgings	239	595	738	39.8	46.8
3332	Primary lead	13	248	272	3362	Wire drawing	198	1,266	1,645	54.9	62.6
3333	Primary zinc	21	230	276	3363	Welded and heavy-riveted pipe	88	528	631	22.1	26.2
3334	Primary aluminum	16	804	736	3369	Primary metal industries, n. e. c.	574	536	670	25.1	30.2

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SIC Code	Industry Title	Value Of Products Shipped		Employment	
		1954	1956	1954	1956
3321	Gray iron foundries (jobbing)	\$1,419,000,000	\$1,810,000,000	133,900	150,000
	Gray iron foundries (captive)	1,167,000,000	1,339,000,000	74,400	80,400
	Total-Gray Iron Foundries	2,586,000,000	3,149,000,000	208,300	230,400
3322	Malleable foundries (jobbing)	212,000,000	265,000,000	23,400	27,100
	Malleable foundries (captive)	169,000,000	187,000,000	12,200	13,100
	Total-Malleable Foundries	381,000,000	452,000,000	35,600	40,200
3323	Steel foundries (jobbing)	535,000,000	925,000,000	55,100	70,000
	Steel foundries (captive)	186,000,000	257,000,000	15,300	21,000
	Total-Steel Foundries	721,000,000	1,182,000,000	70,400	91,000
3361	Nonferrous foundries (jobbing)	874,000,000	1,127,000,000	73,500	83,800
	Nonferrous foundries (captive)	560,000,000	681,000,000	39,600	47,400
	Total-Nonferrous Foundries	1,434,000,000	1,808,000,000	113,100	131,200
FOUNDRY INDUSTRY TOTAL		\$5,122,000,000	\$6,591,000,000	427,400	492,800

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Manufacture of Fabricated Metals—S.I.C. 34

S.M. Estimates, 1956, for 100 Counties with 75% of 1956 Employment

COUNTY and STATE	No. of Plants 1/1/57 (thou.)	S.M. No. of Employees 1954 Cen-sus	COUNTY and STATE	No. of Plants 1/1/57 (thou.)	S.M. No. of Employees 1954 Cen-sus	COUNTY and STATE	No. of Plants 1/1/57 (thou.)	S.M. No. of Employees 1954 Cen-sus	COUNTY and STATE	No. of Plants 1/1/57 (thou.)	S.M. No. of Employees 1954 Cen-sus	COUNTY and STATE	No. of Plants 1/1/57 (thou.)	S.M. No. of Employees 1954 Cen-sus
Cook, Ill.	88.5	1,751	Worcester, Mass.	8.8	162	Jefferson, Ala.	6.2	80	Calhoun, Mich.	4.0	21	Bristol, Mass.	2.6	95
Los Angeles, Cal.	54.0	1,097	Alameda, Cal.	8.8	181	San Francisco, Cal.	5.8	158	Tulsa, Okla.	3.8	68	Delaware, Pa.	2.5	46
Wayne, Mich.	41.3	728	Kent, Mich.	8.7	108	Trumbull, Ohio	5.6	82	Butler, Ohio	3.8	24	Ramsey, Minn.	2.5	68
Cuyahoga, Ohio	37.3	622	Harris, Tex.	8.8	161	Oakland, Mich.	5.9	209	Westchester, N. Y.	3.8	123	Berks, Pa.	2.5	43
Philadelphia, Pa.	28.1	573	Summit, Ohio	8.5	81	Chautauqua, N. Y.	5.0	42	Bergen, N. J.	3.8	184	Oklahoma, Okla.	2.4	46
Kings, N. Y.	22.9	799	Fairfield, Conn.	8.4	174	Mahoning, Ohio	4.9	62	Manitowoc, Wisc.	3.7	14	Essex, Mass.	2.4	80
St. Louis, Mo.	17.8	313	Mercer, N. J.	8.2	50	Multnomah, Ore.	4.9	127	Monroe, N. Y.	3.7	90	Henrico, Va.	2.4	28
Hartford, Conn.	17.4	203	Hudson, N. J.	8.2	153	Lorain, Ohio	4.8	52	Erie, Pa.	3.8	82	Davidson, Tenn.	2.4	40
Milwaukee, Wisc.	14.7	231	Montgomery, Pa.	8.1	88	Onondaga, N. Y.	4.8	78	York, Pa.	3.4	32	Columbus, Ohio	2.3	16
Baltimore, Md.	14.7	180	Middlesex, Mass.	8.1	213	Hennepin, Minn.	4.8	189	Sheboygan, Wisc.	3.2	13	Orleans, La.	2.2	70
Hamilton, Ohio	14.5	195	Lake, Ind.	8.0	49	Westmoreland, Pa.	4.6	30	Sedgwick, Kans.	3.2	57	New Castle, Del.	2.2	23
Erie, N. Y.	14.4	177	Marion, Ind.	7.8	142	Jackson, Mo.	4.5	128	Ohio, W. Va.	3.1	8	San Mateo, Cal.	2.1	60
Winnebago, Ill.	13.0	71	Madison, Ind.	7.5	19	Lancaster, Pa.	4.5	50	Kankakee, Ill.	3.0	13	Washington, Wisc.	2.0	8
New Haven, Conn.	12.5	265	Union, N. J.	7.1	148	Oneida, N. Y.	4.8	31	Vanderburgh, Ind.	3.0	16	Kane, Ill.	2.0	39
Jefferson, Ky.	12.4	67	Hamilton, Tenn.	7.1	33	King, Wash.	4.5	144	Racine, Wisc.	3.0	50	Northampton, Pa.	2.0	24
Franklin, Ohio	12.0	93	Beaver, Pa.	6.9	20	Nassau, N. Y.	4.5	156	Howard, Ind.	2.8	18	Litchfield, Conn.	2.0	49
New York, N. Y.	12.0	889	Providence, R. I.	8.6	274	Dallas, Tex.	4.2	134	Ottawa, Mich.	2.8	33	Total Above Counties	838.7	16,238
Queens, N. Y.	11.8	384	Suffolk, Mass.	8.5	203	Passaic, N. J.	4.1	118	Camden, N. J.	2.8	68	% of USA Total	75.4	71.9
Essex, N. J.	10.2	382	Stark, Ohio	6.5	61	Dade, Fla.	4.1	147	Lehigh, Pa.	2.8	33			
Lucas, Ohio	9.8	108	Bronx, N. Y.	6.5	264	La Crosse, Wisc.	4.0	8	Hampden, Mass.	2.8	81			
Genesee, Mich.	9.5	31	Macomb, Mich.	6.5	166	Tippecanoe, Ind.	4.0	7	Richland, Ohio	2.7	25			

S.M. Estimates, 1956, for 4-Digit Industries of S.I.C. 34

One of the bigger industries, with 27 four-digit components, fabricated metal products shows a healthy gain in value of products shipped. The huge \$1,600,000,000 tin cans and other tinware industry leads the parade with a 19% rise over 1954. The smallest gain was cutlery's

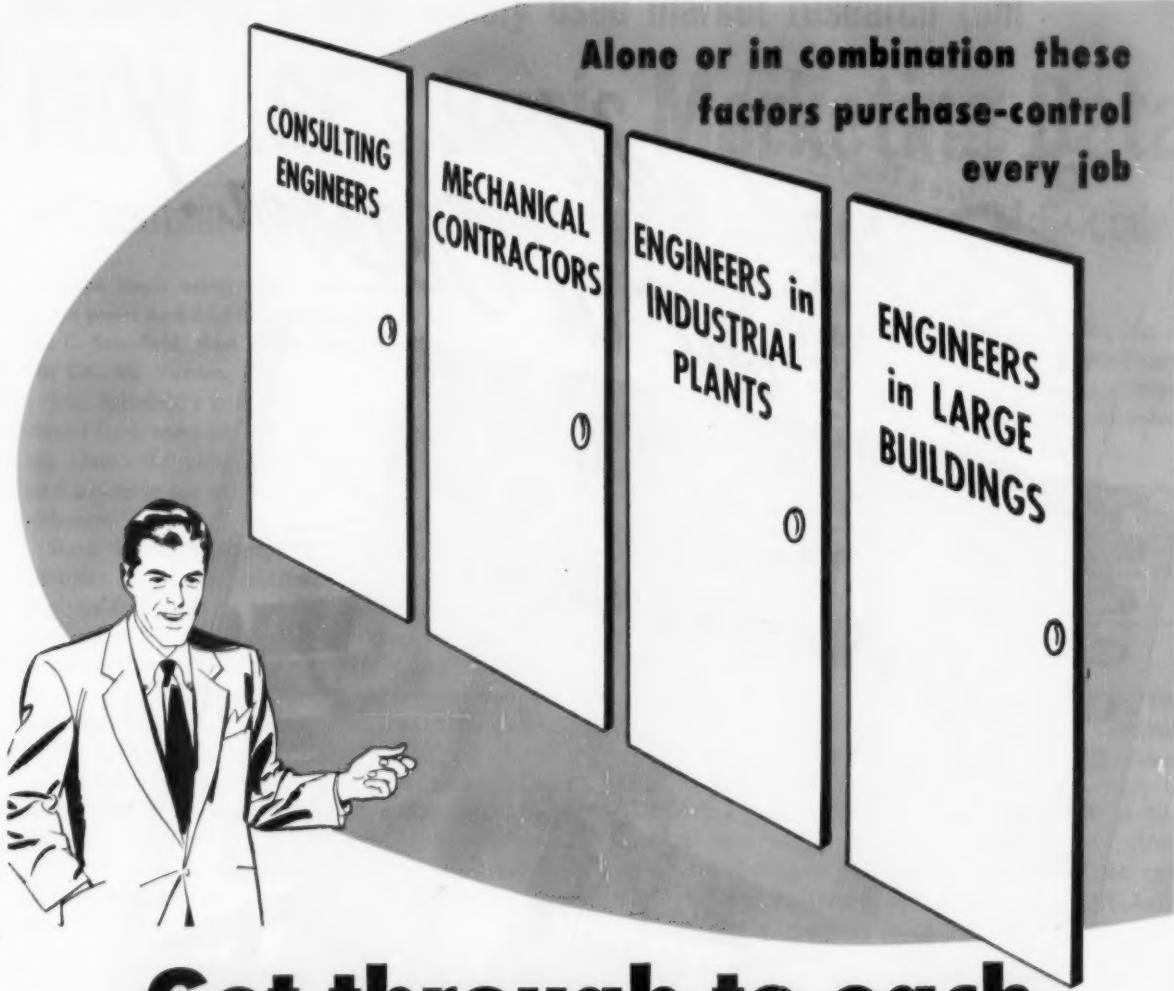
10%. Many of the industries, such as heating and cooking equipment, structural and ornamental work, boiler shop products, vitreous enameled products, lighting fixtures, wirework and steel springs showed solid gains of 14% and higher.

S. I. C. Code Number	INDUSTRY	No. of Plants 1954 Cen-sus	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)		S. I. C. Code Number	INDUSTRY	No. of Plants 1954 Cen-sus	Gross Sales Value Products Shipped (\$ million)		Employment (thous.)		
			1954 Cen-sus	S.M.	1954 Cen-sus	S.M.				1954 Cen-sus	S.M.	1954 Cen-sus	S.M.	
			Est. 1/1/57	Est. 1/1/57	Est. 1/1/57	Est. 1/1/57				Est. 1/1/57	Est. 1/1/57	Est. 1/1/57	Est. 1/1/57	
3411	Tin cans and other tinware	227	1,367	1,626	55.2	54.5	3415	Heating and plumbing equipment						
3412	Cutlery, tools, and hardware	182	170	187	15.1	13.4	3431	Plumbing fixtures and fittings	321	442	502	30.6	28.3	
3421	Cutlery	247	69	76	7.1	7.6	3439	Heating and cooking equip., n. e. c.	899	1,147	1,322	76.3	78.2	
3422	Edge tools	503	257	283	23.4	25.1	3445	Structural metal products						
3423	Hand tools, n. e. c.	30	27	29	2.9	3.0	3441	Structural and ornamental work	2,917	1,910	2,055	116.3	130.2	
3424	Files	99	84	92	6.9	7.2	3442	Metal doors, sash, and trim	1,106	639	716	43.3	47.5	
3425	Hand saws and saw blades	869	1,112	1,232	88.3	92.1								
3429	Hardware, n. e. c.													

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MONTHLY HIGH-SPOT CITIES SALES FORECAST

of next month's sales volume in more than 200 U. S. and Canadian cities. In every first issue of the month SALES MANAGEMENT forecasts what the month's retail sales will be in leading U. S. Cities. We give the sales volume, the percentage of change from the same month last year and its relation to the national change for the same period. The Survey of Buying Power gives you sales for the latest complete year. In between the current Survey and its successor, "High-Spot Cities" alerts you to changes in the making . . . each month.



Get through to each to sell any product used in heating, piping, and air conditioning

Besides their undisputed control of purchasing in this field, what do these KEY factors have in common?

Collectively they are the reader-audience of Heating, Piping & Air Conditioning . . . and no other publication gets through to them like HP&AC. The fact that every copy is *paid for* gives the proof.

But the largest and only fully paid (ABC) circulation in the field isn't the only point in HP&AC's favor. It also leads its nearest rival by over 2 to 1 in advertising volume, carries more

editorial pages by far, has more advertisers, and is used on an exclusive basis by more advertisers.

Conclusion: If you want truly ACTIVE and RESPONSIBLE help in getting through to your prospects, concentrate your advertising in HP&AC. It will meet *face-to-face* the engineers and contractors indicated above PLUS the field's important wholesalers and the original equipment manufacturers who are large-scale buyers of accessory products required in factory-built assemblies.



Heating, Piping & Air Conditioning

Air Conditioning Headquarters

KEENEY PUBLISHING CO., 6 N. MICHIGAN AVE., CHICAGO 2

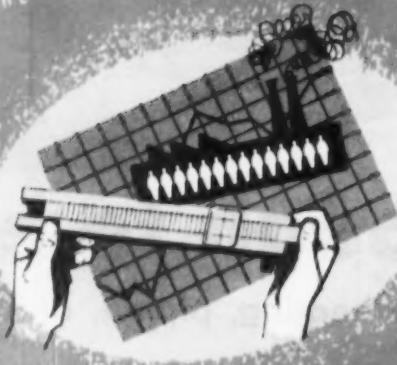
JULY 10, 1957



*Revised edition
out in October!*

Basic Marketing Data

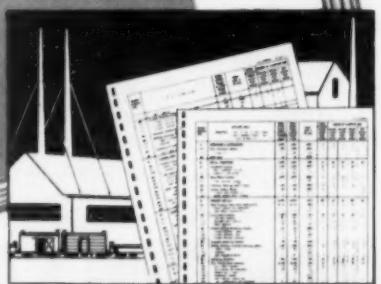
for
THE METALWORKING INDUSTRY



2, 3, and 4-digit detail, nationally and by industrial areas, showing actual plant worker employment plus number of plants by size groups.



COMPLETE STATE TOTALS—in 4-digit detail—for metalworking plants employing 20 or more plant workers will be an added feature of The IRON AGE's new Basic Marketing Data. County data also available on request.



INDUSTRIAL AREA TOTALS are invaluable for plotting sales territories and evaluating territorial sales performance. The revised Basic Marketing Data will incorporate the additional S.I.C. codes recently announced by the Bureau of the Budget.

Metalworking's most widely used market research tool

IRON AGE's Basic Marketing Data

will contain 1957 plant census figures based on new S.I.C. codes

"I have been using your Basic Marketing Data for some years and find it to be the best in this field," says W. C. Schofield, Asst. Sales Mgr., Ward Leonard Electric Co., Mt. Vernon, N.Y.

Mr. Schofield's comment is typical of hundreds received from users of The IRON AGE's Basic Marketing Data—the most comprehensive market research tool available for investigating the huge metalworking industry.

Basic Marketing Data is not a rehash of government statistics. It is an independently compiled, S.I.C.-coded analysis of all major metalworking plants . . . those employing 20 or more plant workers. It presents the metalworking industry both nationally and locally in 2, 3, and 4-digit detail. Furthermore, it gives you both plant size and actual number of plant workers—the real key to buying power.

Basic Marketing Data helps take the guesswork out of marketing to metalworking. With it, for example, you can plot sales territories more effectively, evaluate sales performance more accurately, uncover new markets for established products, and probe the market potential for new products.

New Figures—New Features

The revised edition of Basic Marketing Data, out in October, will be based on 1957 IA plant census figures and will include the new S.I.C. codes recently released by the Bureau of the Budget. Among the added features you will find in the new Data are:

Complete 4-digit plant totals by states as well as by industrial areas

New breakdown of plant worker totals to show those in plants with 100 or more workers

Make your own comparison

Use the coupon below to request a *free* copy of The IRON AGE's present Basic Marketing Data. Compare it with whatever source you now use. We're confident you will then order the revised edition for delivery in October. Copies of the new edition are priced at \$25 each to help defray part of the preparation cost. After October, 1957, you can also order a copy of the new Basic Marketing Data from one of The IRON AGE regional business offices listed below.

IRON AGE

The

Chestnut & 56th Sts., Philadelphia 39, Pa.

A Chilton
Publication



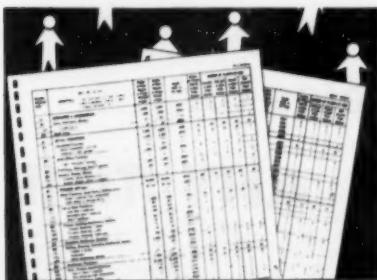
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NEW PLANT WORKER BREAKDOWN
will include a 4-digit S.I.C. listing showing totals for workers in metalworking plants employing 100 or more plant workers—a convenience for those whose market is concentrated among larger plants.

Oliver Johnson, Director of Research, The IRON AGE
Chestnut & 56th Sts., Philadelphia 39, Pa.

- Before purchasing the new Data I would like to examine the current edition. Please send me a copy without obligation (limited number available).
- Please send me, as soon as available, a copy of The IRON AGE's new Basic Marketing Data.
- Check for \$25 enclosed

Please bill me later

Please send also a free copy of "How to Pinpoint Your Marketing to Metalworking" showing how to use Basic Marketing Data and IA's companion IBM facility to conduct metalworking market research.

NAME _____ TITLE _____

COMPANY _____

NATURE OF BUSINESS _____

STREET ADDRESS _____

CITY _____ ZONE _____ STATE _____

(Signature) _____



Manufacture of Fabricated Metal Products—(Cont'd)

SIC Estimates, 1956, for 4-Digit Industries of S.I.C. 34—(Continued)

S. I. C. Code Num- ber	INDUSTRY	Gross Sales				S. I. C. Code Num- ber	INDUSTRY	Gross Sales				
		Value Prod- ucts Shipped (\$ million)		Employment (thous.)				Value Prod- ucts Shipped (\$ million)		Employment (thous.)		
		No. of Plants (1954 Cen- sus)	SIC 1954 Cen- sus Est. 1/1/57	SIC 1954 Cen- sus Est. 1/1/57	No. of Plants (1954 Cen- sus)	SIC 1954 Cen- sus Est. 1/1/57	SIC 1954 Cen- sus Est. 1/1/57	No. of Plants (1954 Cen- sus)	SIC 1954 Cen- sus Est. 1/1/57	No. of Plants (1954 Cen- sus)	SIC 1954 Cen- sus Est. 1/1/57	
3443	Boiler shop products	977	1,134	1,315	74.4	82.5	3480	Wirework, n. e. c.	1,275	745	879	89.9
3444	Steel-metal work	2,421	738	834	50.2	55.1	3490	Metal products, n. e. c.				
346	Metal stamping and coating						3491	Metal barrels, drums and pails	93	217	243	10.6
3461	Vitreous-enameling products	81	66	76	7.3	8.1	3492	Safes and vaults	26	40	46	3.4
3465	Enameling and lacquering	380	45	51	5.5	6.0	3493	Steel springs	101	116	135	7.1
3466	Galvanizing	133	32	35	3.2	3.4	3494	Bolts, nuts, washers and rivets	487	700	794	53.7
3467	Engraving on metal	289	27	31	3.6	4.2	3495	Screw machine products	1,795	401	470	35.0
3468	Plating and polishing	2,451	304	340	30.1	40.0	3496	Collapsible tubes	21	37	41	4.6
3471	Lighting fixtures	1,228	642	781	46.1	48.3	3499	Fabricated metal prod., n. e. c.	1,026	238	264	18.1

Manufacture of Machinery (Except Electrical)—S.I.C. 35

SIC Estimates for 100 Counties with 73% of 1956 Employment

COUNTY and STATE	SIC Employ- ment 1/1/57 (thous.)	No. of Plants 1954 Cen- sus											
Cook, Ill.	115.0	1,871	Winnebago, Ill.	14.0	141	York, Pa.	8.1	60	Kent, Mich.	5.9	81	Tompkins, N. Y.	3.8
Wayne, Mich.	74.8	1,148	Muskegon, Mich.	13.8	46	Baltimore, Md.	7.8	141	Richland, Ohio	5.8	21	Bergen, N. J.	3.8
Los Angeles, Cal.	84.7	2,068	Erie, N. Y.	13.5	20	Racine, Wis.	7.8	86	Summit, Ohio	5.6	171	Erie, Ohio	3.8
Milwaukee, Wis.	50.7	406	Hudson, N. J.	13.4	141	Erie, Pa.	7.8	88	Calhoun, Mich.	5.8	23	Scott, Iowa	3.8
Cuyahoga, Ohio	46.5	777	Dutchess, N. Y.	13.1	29	Black Hawk, Iowa	7.3	28	Windor, Vt.	5.0	13	Marion, Ohio	3.8
Montgomery, Ohio	43.6	195	Marion, Ind.	13.1	23	Suffolk, Mass.	6.9	164	Herkimer, N. Y.	4.9	10	Allen, Ind.	3.8
Hartford, Conn.	36.3	287	Allegheny, Pa.	12.9	193	Westmoreland, Pa.	6.7	34	Saginaw, Mich.	4.9	47	Waukeeha, Wis.	3.7
Tazewell, Ill.	26.8	14	Kings, N. Y.	12.4	417	Chemung, N. Y.	6.8	13	Lancaster, Pa.	4.9	68	Warren, N. J.	3.7
Philadelphia, Pa.	23.8	401	Vanderburgh, Ind.	12.4	26	Rock, Wis.	6.8	28	Queens, N. Y.	4.9	255	Bartholomew, Ind.	3.6
Jefferson, Ky.	22.9	70	Schenectady, N. Y.	12.1	12	Lake, Ill.	6.8	53	Will, Ill.	4.8	18	Lawrence, Pa.	3.5
Hamilton, Ohio	21.3	222	New Haven, Conn.	11.8	206	Dallas, Tex.	6.4	182	Linn, Iowa	4.8	30	San Francisco, Cal.	3.5
Worcester, Mass.	20.9	208	Providence, R. I.	11.4	190	St. Joseph, Ind.	6.4	57	Westchester, N. Y.	4.7	86	Bristol, Mass.	3.5
Fairfield, Conn.	20.8	282	Oakland, Mich.	11.3	417	Kane, Ill.	6.3	63	Chautauqua, N. Y.	4.7	41		
Rock Island, Ill.	19.5	48	Hennepin, Minn.	10.9	234	New York, N. Y.	6.3	553	Venango, Pa.	4.8	16	Total Above Counties	1,253.8
Harris, Tex.	18.0	248	Broome, N. Y.	10.8	39	Tulsa, Okla.	6.3	137	La Porte, Ind.	4.5	25		17,128
St. Louis, Mo.	18.0	311	Esex, Mass.	10.7	140	Berks, Pa.	6.2	56	Mercer, N. J.	4.5	82	% of USA Total	73.1
Hampden, Mass.	17.1	130	Lucas, Ohio	9.3	131	Sangamon, Ill.	6.2	14	Shelby, Tenn.	4.5	44		88.0
Union, N. J.	16.7	218	Middlesex, Mass.	9.3	262	Montgomery, Pa.	6.1	114	Passaic, N. J.	4.4	186		
Franklin, Ohio	16.3	108	Wayne, Ind.	9.0	29	Lenawee, Mich.	6.1	36	Butler, Ohio	4.3	32		
Stark, Ohio	14.4	78	Alameda, Cal.	8.8	177	Flamey, Minn.	6.1	73	Franklin, Pa.	4.3	21		
Essex, N. J.	14.3	328	Monroe, N. Y.	8.8	150	Berrien, Mich.	6.1	85	Litchfield, Conn.	4.3	51		
Onondaga, N. Y.	14.2	98	Macomb, Mich.	8.2	344	Delaware, Pa.	6.0	46	Norfolk, Mass.	4.2	74		

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A NEW RESEARCH SERVICE

**How to Forecast Retail Sales for
ANY AREA, ANY PRODUCT, ANY TIME**

See Announcement on Page 114

Modern Industrial Press

A Watson Publication



Provides Circ. Statements subject to audit by
Business Publications Audit of Circulation, Inc.



Published monthly by Watson Publications, Inc., 201
N. Wells St., Chicago 6, Ill. State 2-4121.

PERSONNEL

Publisher—David R. Watson

Associate Publisher—Emmet O'Connell

Editor—Matt E. Heuerts

Production Manager—Greg Minogue

Advertising Production Manager—Helen Dudek

REPRESENTATIVES

Chicago 6—Emmet O'Connell, 201 N. Wells St.
State 2-4121.

New York, New England, and Eastern Pennsylvania—
John M. Sifton, Robert A. Potts, Room 1102, 441
Lexington Ave., Murray Hill 2-8352.

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Pacific Coast—W. R. McIntyre & Associates, 423
First Trust Bldg., Pasadena 1, Calif. Ryan 1-0981;
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Bldg., 681 Market St., San Francisco, Calif.

MAILING INSTRUCTIONS

Plates and insertion orders to be shipped to Manager
—Advertising Production at Chicago office.

Ship inserts direct to printer, Modern Industrial
Press, c/o The Strathmore Co., 20 South Lake St.
Aurora, Ill.

COMMISSION AND CASH DISCOUNT

15% to agencies; 2% 10 days from billing date. Net
30 days.

ADVERTISING RATES

Effective January 1957 issue.
Rates received May 10, 1956.

GENERAL

90-day notice given of rate revision.

RATES

	1 tl.	3 tl.	6 tl.	12 tl.
(a) 1 page	395.00	345.00	325.00	295.00
(b) 1/2 page	225.00	200.00	185.00	160.00
(c) 1/3 page	200.00	175.00	165.00	140.00
(d) 1/4 page	125.00	120.00	110.00	95.00
(e) 1/8 page	100.00	90.00	85.00	75.00
16 or more pages, per page	25.00	22.00	20.00	18.00
24 or more pages, per page	25.00	22.00	20.00	18.00
(a) Accommodates bleed pages of 9 x 12" trim-size publications.				
(b) Accommodates 2/3 page plates in 7 x 10" publications.				
(c) Accommodates full page plates in 4-1/2 x 6-1/2" publications.				
(d) Accommodates 1/3 page plates in 7 x 10" publications.				
(e) Accommodates horizontal 1/2 page plates in 4-1/2 x 6-1/2" publications.				

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1st cover—not sold.	
2nd cover	450.00
3rd cover	400.00
4th cover	500.00

INSERTS

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Based on charge, per page (net).
Fold-out Inserts—rates on request.

Contact Chicago office for number of insertions required.

SPECIAL POSITIONS

Page 2, extra	25%
Other specified positions, extra	15%

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AAAA standard red, orange, blue, yellow or green:

1 color and black:
1 page, extra

70.00

2 facing pages, same form, extra

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1 color, one page, extra

115.00

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Available in full-page and vertical half-page units only. Black or 1 color bleed, extra

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No charge for across gutter bleed on two facing pages.

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Per column inch

12.00

CIRCULATION

Established 1939.

B. P. A. 3-31-57

Total (free) circ. (6 mos. aver.)

11,148

Advertisers (advertising agencies)

608

All other unpaid distribution

567

Total distribution (6 months average)

12,323

TERRITORIAL DISTRIBUTION

Based on single issue dated March, 1957.

New England 1,024 West So. Central 211

Middle Atlantic 2,817 Mountain States 48

East No. Central 5,567 Pacific States 1,140

West No. Central 510 Canada 107

South Atlantic 322 Foreign 46

East So. Central 218

TRADE DISTRIBUTION

SIC 19: Ordnance and accessories 60. SIC 25: Furniture and fixtures 217. SIC 33: Primary metal industries 1,017. SIC 34: Fabricated metal products 4,433. SIC 35: Machinery, except electrical 3,309. SIC 36: Electrical machinery, equipment and supplies 1,261. SIC 37: Transportation equipment 1,686. SIC 38: Professional, scientific and controlling instruments, photographic goods, clocks 269. SIC 39: Miscellaneous manufacturing industries 1,064. SIC 50: Trade, commerce, wholesalers 194. SIC 51: Wholesale trade other than merchant wholesalers 88. SIC 82: Educational services 41. SIC 86: Non-profit membership organizations 11. SIC 89: Miscellaneous services 40. SIC 90: Government 21. Miscellaneous 2

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Furnaces and Induction Heating Units	Feeding and Transferring Devices

MATERIALS

Ferrous and Non-ferrous Sheet and Strip	Drawing and Forging Compounds
Die Steels	Cleaning and Finishing Supplies
Carbides	Tooling Plastics
Die Supplies	Lubricants

SERVICES AND FACILITIES

Dies and Tooling Plant Layout	Job and Contract Stamping Design and Engineering
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TO MANUFACTURERS OF
THESE TYPES OF PRODUCTS...

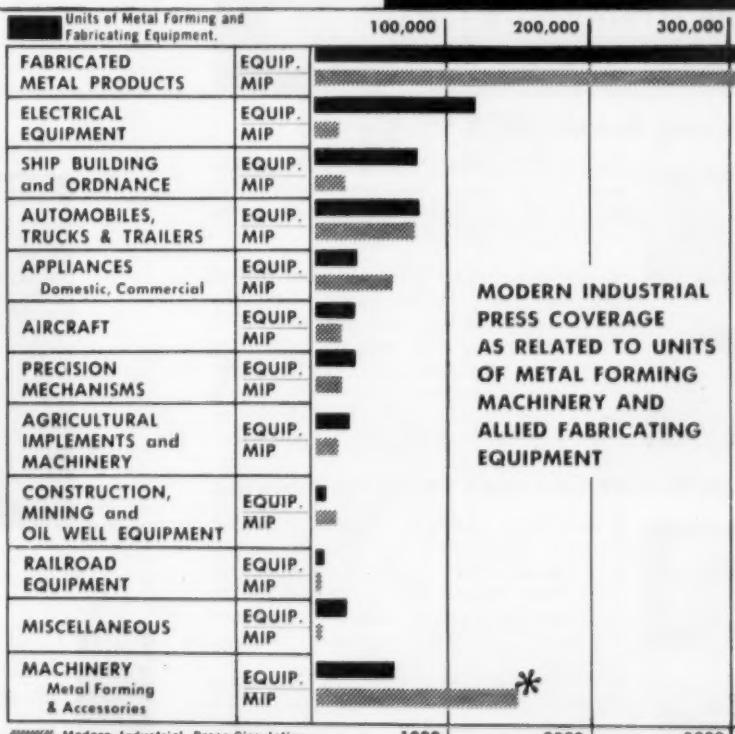
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MARKETS ON THE MOVE
No. 1 in a series of reports to
Sales Management by Editors
of STEEL

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145 Billion Sales Volume in 1957

375 Billion by 1975

- SALES CONTINUE TO CLIMB
- SELLING PRICES WILL RISE
- MARKETING TO GET ATTENTION
- RESEARCH SPENDING WILL RISE

Here are the subjects . . . trends . . . ideas that metalworking management men are thinking about. In this conversation, STEEL's editors reveal the findings of a sweeping new survey of the plans metalworking executives are making for the future. The sum total: inside information for sales and marketing executives.

Selling Prices Up 3.9%



IRWIN SUCH, Editor-in-Chief: Everybody expects a bigger business volume for metalworking this year. Where's the money going to come from?

WALT CAMPBELL, Editor: Higher prices, for one thing. We've looked over the replies to our survey, and more than 75% of the reporting companies indicate plans afoot for a price hike sometime this year. The biggest increases will be a 4.5% boost in SIC 35—machinery, except electrical—and a 4% hike in SIC 37—transportation.

Significant Changes in Sales Volume



VANCE BELL, Associate Managing Editor: Almost every sales executive in metalworking expects to increase his sales this year. More than a third of the people we contacted are even more optimistic about the second half of the year than the first.



JOHN S. MORGAN, Associate Managing Editor: Electrical machinery makers expect a boom year. They predict a 12.4% sales increase. Others that look to significant increases are instruments and related products, with an 8.8% predicted rise; and transportation, expecting 8% more sales this year than last.

76.6%

EXPECT
INCREASE

SELLING PRICES

UP 3.9%

20.8%

2.6%
EXPECT
DECREASE

NO
CHANGE

73.1%

EXPECT
INCREASE

**Second Half of 1957 Will Be
2.3% Better Than First Half**

**Sales Volume in 1957
Will be 7.7% Higher**

37.2%

EXPECT
INCREASE

45.8%

NO
CHANGE

5.1%
EXPECT
DECREASE

21.8%
NO
CHANGE

17.0%

EXPECT
DECREASE

SALES MANAGEMENT

Thinking BIG ENOUGH for Metalworking's Fabulous Future

Sales and Distribution Costs Up 2.5%



WILLIAM M. ROONEY, *Market Editor*: Metalworking management also expects to pay more to move goods this year. More than half of metalworking's companies will be adding more salesmen. Almost half will add new distributors. A fifth will go after more export sales. Almost 60% will boost their advertising and sales promotion budgets. Competition will be hotter than ever before.



SUCH: And let's not forget about the new concept of marketing. It's coming into use by more and more companies, and we'll see it really take root and grow this year as never before. Another thing—foreign-produced goods will make competition even keener.

Product Research



DR. ALLEN G. GRAY, *Technical Editor*: This year will be a new-product year. More than 60% of the companies we contacted will bring out new products. Research budgets are up in almost 40% of metalworking. And this research will result in volume production of new and improved products sooner than ever before.



CAMPBELL: There's competition again. More research is just one way metalworking companies will compete for the growing number of dollars in the metalworking market.

Tools for the Task

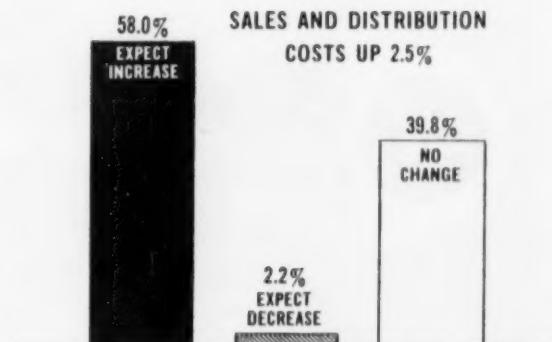


SUCH: Selling this giant market is a big job—the biggest sales management has ever faced. It requires a broadened approach to sales planning and more detailed knowledge of specific markets.

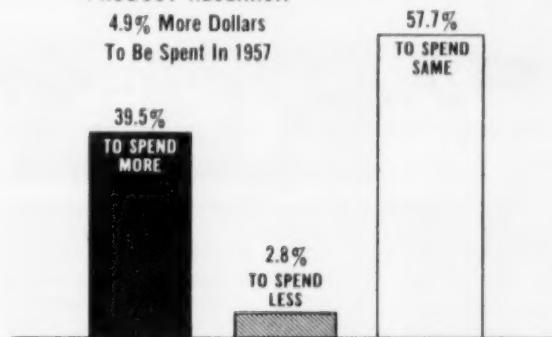


CAMPBELL: That's exactly why our market research department has published its new edition of "Metalworking Markets in the U.S." All the information from STEEL's census of metalworking is in it—the results of our most recent surveys—the newest basic market information we have. We've made it a workbook tailored to the needs of metalworking marketers.

A limited number of copies of STEEL's "Metalworking Markets in the U.S." is available to sales executives. You may get a copy by contacting the nearest STEEL sales representative. Also available from STEEL: the famous metalworking marketing map, specific market information, and material from STEEL's award-winning series of problem-solving management articles.



PRODUCT RESEARCH



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SM S.I.C. Manufacture of Machinery (Except Electrical)—(Cont'd)

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 35

Tied for second in the number of component industries, machinery except electrical, with 39, shows a fine run of outstanding gains in value of products shipped. Gains of more than 25%, for example, are posted by such industries as construction and mining machinery, machine tools,

metalworking machinery, special dies and tools, industrial furnaces, general industrial machinery, domestic laundry equipment, vacuum cleaners, measuring and dispensing pumps, valves and fittings, ball and roller bearings and machine shops.

S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales		Employment (thous.)	S. I. C. Code Num- ber	INDUSTRY	Gross Sales		Employment (thous.)
			1954 Cen- sus	SM Est. 1/1/57				1954 Cen- sus	SM Est. 1/1/57	
351	Engines and Turbines					353	Construction and Mining Machinery			
3511	Steam Engines & Turbines	22	450	840	30.2	3531	Construction and Mining Machinery	626	1,132	1,415
3519	Internal Combustion Engines	119	891	1,024	51.8	354	Metalworking Machinery			
352	Tractors and Farm Machinery					3541	Machine Tools	630	1,147	1,411
3521	Tractors	104	1,178	1,342	64.7	3542	Metalworking Machinery	501	840	1,050
3522	Farm Machinery (exc. tractors)	1,206	1,006	1,194	74.4	3544	Special Dies and Tools	4,377	932	1,164

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and HITCHCOCK'S MACHINE AND
TOOL DIRECTORY**

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GRINDING AND FINISHING

... the only publication devoted exclusively to the fast-growing, multi-million dollar abrasive phase of the metalworking industry.



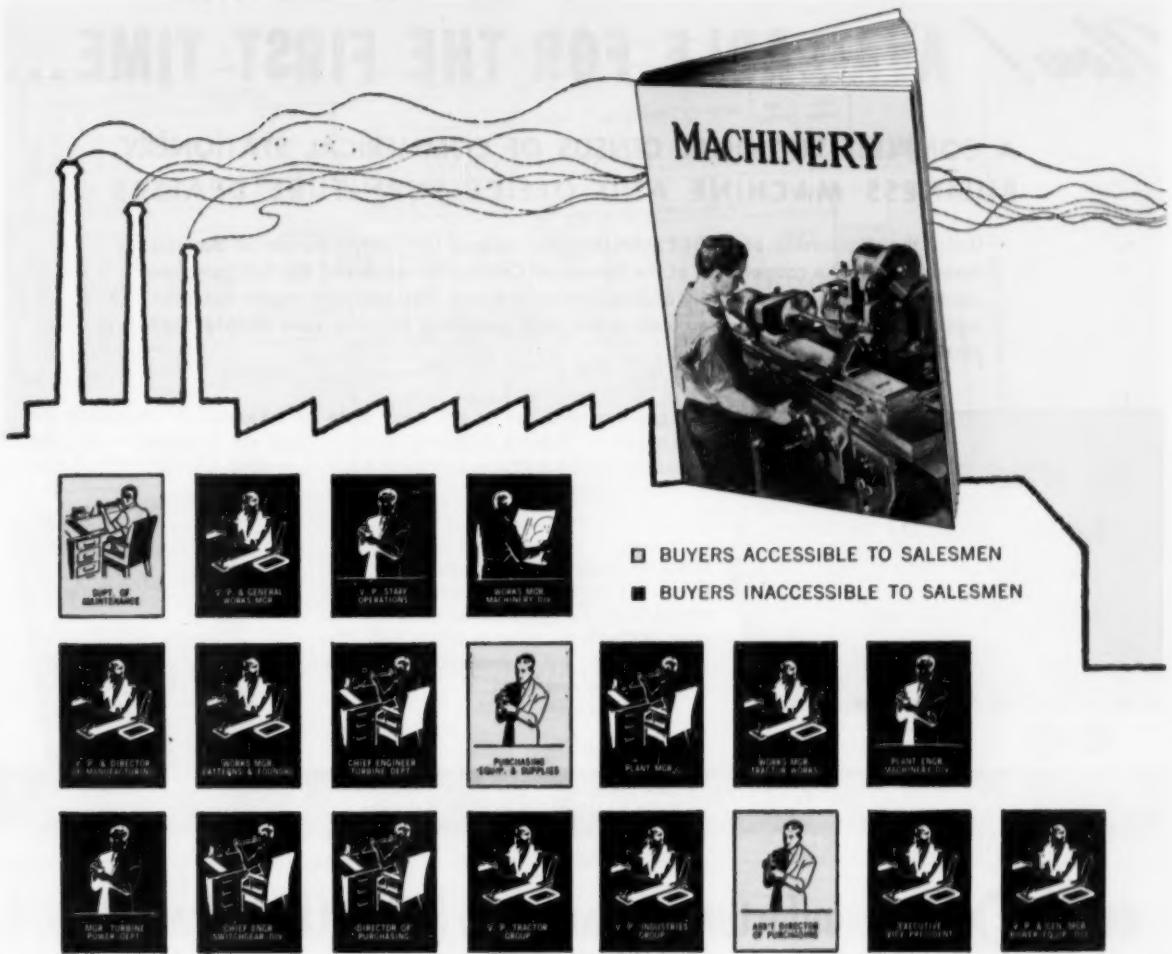
CARBIDE ENGINEERING

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THE PIONEER OF CONTROLLED CIRCULATION



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To illustrate—there's the plant of an important machinery manufacturer in Wisconsin in which 19 men are responsible for the selection and purchase of equipment, machine tools, unit machine parts and materials. Only 3 of these men are accessible to salesmen—a situation which leaves a serious gap in your sales-coverage of this one plant alone.

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Under the sponsorship of OFFICE APPLIANCES, Indiana University's Bureau of Business Research, with the cooperation of the Bureau of Census, has produced the first complete retail census of the office supply and equipment industry. This exclusive report has been supplemented by extensive research in the field providing accurate case histories and other valuable market data.

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- Analyze and select media

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SIC Manufacture of Machinery (Except Electrical)—(Cont'd)

Estimates, 1956, for 4-Digit Industries of S.I.C. 35—(Continued)

S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)		S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)		
			1954 Cen- sus		1954 Cen- sus					1954 Cen- sus		1954 Cen- sus		1954 Cen- sus
3545	Metalworking Mach. Attachments	1,022	477		582	44.9	47.6	3563	Conveyors	309	479	574	32.4	37.3
356	Special-industry Machinery, n. s. c.							3564	Blowers and Fans	214	262	309	18.1	20.6
3581	Food-products Machinery	872	404		473	33.2	38.5	3585	Industrial Trucks and Tractors	245	248	294	15.8	19.1
3582	Textile Machinery	538	337		377	36.8	40.6	3586	Power-transmission Equipment	471	604	688	49.6	53.8
3583	Woodworking Machinery	249	187		191	12.0	12.7	3587	Industrial Furnaces and Ovens	187	180	200	8.4	10.0
3584	Paper-industries Machinery	160	197		234	18.0	18.4	3589	General Industrial Mach., n. s. c.	480	370	463	27.9	34.2
3585	Printing-trades Machinery	388	249		281	22.0	23.7	357	Office and Store Machines					
3586	Special-industry Machinery, n. s. c.	917	581		668	47.0	50.3	3571	Computing and Related Machines	84	614	738	56.7	69.8
3587	General Industrial Machinery							3572	Typewriters	18	173	200	18.4	21.4
3588	Pumps and Compressors	408	881		1,089	60.3	68.1	3578	Scales and Balances	78	64	74	5.4	6.4
3582	Elevators and Escalators	131	181		187	10.3	11.6	3579	Office and Store Machines, n. s. c.	220	278	326	20.8	28.1

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CARD 1 - POPULATION AND INCOME														
DESCRIPTION				POPULATION				BUYING INCOME						
STATE	COUNTY	CITY	ZIP	TOTAL	% OF USA	FAMILIES	URBAN	NET DOLLARS	% OF USA	PER CAPITA	PER FAMILY			
CARD 2 - INCOME DISTRIBUTION														
STATE	COUNTY	CITY	ZIP	UP TO \$2,499	\$2,500- 5,999	\$6,000- 8,999	\$10,000 AND OVER	UP TO \$2,499	\$2,500- 3,999	\$4,000- 9,999	\$7,000 AND OVER			
CARD 3 - RETAIL SALES AND BUYING POWER INDEX														
STATE	COUNTY	CITY	ZIP	RETAIL SALES				BUTING POWER	POPULATION	SALES	INDEX			
STATE	COUNTY	CITY	ZIP	TOTAL	% OF USA	PER FAMILY	% OF USA POTENTIAL	TYPE OF MARKET	FAMILIES	% OF USA	% OF USA			
CARD 4 - COMPONENTS OF RETAIL SALES														
STATE	COUNTY	CITY	ZIP	GENERAL	APPAREL	FURNITURE HOME FURN.	AUTOMOTIVE	GASOLINE	LUMBER, GLASS MATERIAL, HOME	DRUG STORE	ALL OTHER			
CARD 5 - EMPLOYMENT IN SERVICES														
STATE	COUNTY	CITY	ZIP	ALPHABETIC COUNTY	BANKING	CONSTRUCTION MANUFACTURING	PUBLIC UTIL.	WHOLESALE SALES	FINANCE INSURANCE, REAL ESTATE	SERVICES				
CARD 6 - EMPLOYMENT IN MANUFACTURING														
STATE	COUNTY	CITY	ZIP	FOOD AND KINSHIP PRODUCTS	TOBACCO PRODUCTS	TEXTILE MILL PRODUCTS	APPAREL PRODUCTS	LUMBER EXCEPT FURNITURE	FURNITURE AND FIXTURES	PAPER AND ALLIED PRODUCTS	PRINTING AND PUBLISHING	CHEMICAL PRODUCTS	PETROLEUM AND COAL PRODUCTS	COUNTY ALPHABETIC
CARD 7 - EMPLOYMENT IN MANUFACTURING														
STATE	COUNTY	CITY	ZIP	RUBBER PRODUCTS	LEATHER AND LEATHER PRODUCTS	STONE, CLAY AND GLASS PRODUCTS	PRIMARY METALS	FABRICATED METALS	MACHINERY EXCEPT ELECTRICAL	ELECTRICAL MACHINERY	TRANSPORTATION INSTRUMENTS	WHEEL, LARGEAR	FOCAL	COUNTY ALPHABETIC

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In addition to the factors shown above, many other specialized indexes are available on county cards; Index of Urban Demand (for styled

merchandise), Index of Office Equipment Demand, Index of Resort Activity, Growth Factors (to isolate areas of rapid or slow growth) TV homes as of January 1, 1957, plus all major Census marketing benchmarks (age, distributions, etc.)

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SM S.I.C. Manufacture of Machinery (Except Electrical)—(Cont'd)

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 35—(Continued)

S. I. C. Code Number	INDUSTRY	Gross Sales				S. I. C. Code Number	INDUSTRY	Gross Sales					
		No. of Plants (1954 Cen- sus)	Value Prod- ucts Shipped (\$ million)	Employment (thous.)				No. of Plants (1954 Cen- sus)	Value Prod- ucts Shipped (\$ million)	Employment (thous.)			
				1954 Cen- sus	SM Est. 1/1/57					1954 Cen- sus	SM Est. 1/1/57		
368	Service and Household Machines												
3681	Domestic Laundry Equipment	56	528	712	22.1	27.3	3550	Miscellaneous Mach. Parts					
3682	Laundry and Dry-cleaning Mach.	104	88	102	6.5	7.4	3551	Valves and Fittings, exc. pbgs.	556	950	1,184		
3683	Sewing Machines	82	112	123	12.4	13.4	3552	Fabricated Pipe and Fittings	250	226	271		
3684	Vacuum Cleaners	39	156	192	8.4	9.1	3553	Ball and Roller Bearings	102	537	672		
3685	Refrigeration Machinery	586	1,367	1,517	128.3	129.2	3554	Industrial Patterns and Molds	1,800	194	232		
3686	[Measuring and Dispensing Pumps	32	117	142	8.4	10.0	3555	Machine Shops	6,832	1,107	1,385		
3689	Service and Household Mach., n.e.c.	238	172	216	10.4	12.5							

Manufacture of Electrical Machinery—S.I.C. 36

SM Estimates for 100 Counties with 83% of 1956 Employment

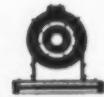
COUNTY and STATE	SM Employ- ment 1/1/57 (thou.)	No. of Plants 1954 Cen- sus											
Cook, Ill.	120.8	581	Marion, Ind.	16.7	36	Kings, N. Y.	12.1	174	Suffolk, Mass.	6.0	67	Lancaster, Pa.	5.3
Los Angeles, Cal.	81.6	843	Schenectady, N. Y.	16.8	10	Erie, N. Y.	12.1	26	Monroe, Ind.	6.5	4	Forsyth, N. C.	5.2
Milwaukee, Wis.	29.8	84	Onondaga, N. Y.	16.0	13	Berkshire, Mass.	11.7	5	Dallas, Tex.	6.3	25	Bristol, Mass.	5.1
Essex, N. J.	27.6	171	St. Louis, Mo.	15.6	53	Baltimore, Md.	11.2	31	Ulster, N. Y.	6.1	5	Lehigh, Pa.	5.0
Hudson, N. J.	24.2	63	Camden, N. J.	14.3	16	Hartford, Conn.	8.7	47	Middlesex, N. J.	6.1	17	Montgomery, Pa.	5.0
Allegheny, Pa.	24.0	36	Alien, Ind.	14.1	16	Lucas, Ohio	8.3	17	Union, N. J.	5.0	64	Eik, Pa.	4.9
Cuyahoga, Ohio	23.6	129	Queens, N. Y.	13.9	180	Mercer, Pa.	8.2	4	Santa Clara, Cal.	5.0	23	Howard, Ind.	4.8
Philadelphia, Pa.	22.0	103	Fairfield, Conn.	13.7	76	West Chester, N. Y.	7.8	88	New Haven, Conn.	5.0	49	Niagara, N. Y.	4.7
Middlesex, Mass.	20.2	93	Monroe, N. Y.	13.4	27	Hamilton, Ohio	7.7	37	Davies, Ky.	5.0	2	Bergen, N. J.	4.6
Essex, Mass.	19.8	80	Montgomery, Ohio	13.0	20	Passaic, N. J.	7.9	42	San Mateo, Cal.	5.0	23	Oneida, N. Y.	4.6
Madison, Ind.	17.0	8	Genesee, Mich.	12.2	3				Wayne, Mich.	5.5	89	Linn, Iowa	4.5

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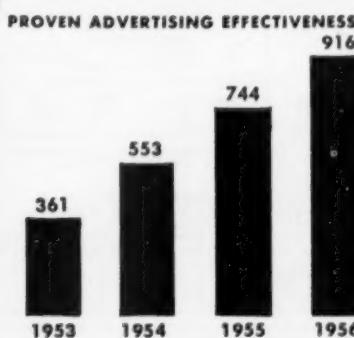
Air Conditioners
Broilers
Clocks, Electric
Clothes Dryers
Coffee Makers
Dehumidifiers
Dishwashers
Electric Bed Coverings

Fans
Food Disposal Units
Fryers, Deep Fat
Home Freezers
Hotplates
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Irons
Kitchen Cabinets

Knife Sharpeners
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A Watson Publication

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Business Publications Audit of Circulation, Inc.

NBP

Published monthly by Watson Publications, Inc., 201 N. Wells St., Chicago 6, Ill. State 2-4121.

PERSONNEL Published—David R. Watson,

Editor-in-Chief—E. P. Peacock;

Business Manager—S. M. Gaskins;

Production Manager—Greg Minogue;

Advertising Production Manager—Helen Dudek.

REPRESENTATIVES

Chicago 6—S. M. Gaskins, 201 N. Wells St. State 2-4121.

New York, New England, and Eastern Pennsylvania—John E. Stilton, Robert Morris, Post Office Box 1102, 441 Lexington Ave., Murray Hill 2-8352.

Cleveland 14-1, C. Bretman, 459 The Arcade, Huppier 1-1920.

Pacific Coast—W. R. McIntyre & Associates, 423 First Trust Bldg., Pasadena 1, Calif., Ryan 1-6981;

W. R. McIntyre & Associates, Room 1088, Monroeville, Pa., Webb 467; Main St., San Francisco, Calif.

MAILING INSTRUCTIONS

Plates and insertion orders to be shipped to Advertising Production Manager at home office.

Ship inserts direct to Appliance Manufacturer, c/o Webb Linn Printing Co., 511 South Sangamon St., Chicago 7, Ill.

COMMISSION AND CASH DISCOUNT

15% to agencies; 5% 10 days from billing date. Net 30 days.

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Effective June 1, 1956.

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90-day notice given in event of rate revision.

RATES 1 ft. 3 ft. 6 ft. 12 ft.

1 page 495.00 440.00 460.00 885.00

1/2 page 270.00 250.00 230.00 210.00

1/4 page 150.00 140.00 130.00 120.00

18 or more pages, per page 87.00

24 or more pages, per page 360.00

Combination rates may be earned with Modern Industrial Press and Modern Railroads beginning January 1957.

COVERS

Cover rates include black and one standard color; additional colors at regular color rates. Also includes bleed borders.

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3rd cover 550.00

4th cover 550.00

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In full page and vertical half page units only.

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No charge for across gutter bleed on two facing pages.

ISSUANCE AND CLOSING DATES

Published monthly, issued 1st day publication month.

Closing date for copy, advertising and editorial materials on or before 1st of month preceding date of publication. Where proofs are required, copy and instructions must be in Chicago office 10 days before closing date. Closing date for plates on or before 8th of month preceding date of publication.

CIRCULATION

Established 1953.

B.P.A. 12-31-56

Total controlled circulation (6 mos. aver.) 15,516

Advertisers, agencies, advertising prospects 941

All other 692

TERRITORIAL DISTRIBUTION

Total controlled circulation based on December, 1956 figures.

1956 Issues 15,523

New England 792 West No. Central 170

Middle Atlantic 2,874 Mountain States 36

East No. Central 7,492 Pacific States 641

West No. Central 1,514 Canada 911

South Atlantic 368 Foreign 69

East No. Central 834

BUSINESS ANALYSIS OF CIRCULATION

SIC 2-14: Metal household furniture 511 SIC 3421: Cutlery 70 SIC 3432: Oil Refining, domestic & industrial 225 SIC 3439: Heating and cooking apparatus (except electric) 3,080 SIC 3465: Enameling, Japanning & Lacquering 55 SIC 3522: Agricultural machinery (except tractors) 97 SIC 3523: Woodworking machinery 49 SIC 3524: Hoods, exhaust and ventilating fans 384 SIC 3581: Domestic laundry equipment 1,997 SIC 3583: Sewing machines 122 SIC 3584: Vacuum cleaners 347 SIC 3585: Refrigerators, refrigeration machinery, climate control air conditioning units 3,523 SIC 3589: Service industries and household machines not elsewhere classified 275 SIC 3614: Motors, generators, motor generator sets 498 SIC 3621: Electrical appliances 2,539 SIC 3661: Radios, radio & television equipment (except radio tubes), radars and related detection apparatus, and phonographs 6,077 SIC 3671: Motion picture machinery and equipment 12 SIC 3701: Photographic equipment and supplies 65 SIC 3711: Watches, clocks & parts (except watch-case) 158 SIC 3711: Fabricated plastic products not elsewhere classified 188 SIC 3811: Engineering and architectural services 191 SIC 386: Nonprofit membership organizations 30 SIC 2721: Appliance editors of consumer magazines 30



Manufacture of Electrical Machinery—(Cont'd)

S.M. Estimates for 100 Counties with 83% of 1956 Employment — (Continued)

COUNTY and STATE	S.M. No. of Plants 1/1/57 (thou.)	COUNTY and STATE	S.M. No. of Plants 1954 Census	COUNTY and STATE	S.M. No. of Plants 1954 Census	COUNTY and STATE	S.M. No. of Plants 1954 Census	COUNTY and STATE	S.M. No. of Plants 1954 Census	COUNTY and STATE	S.M. No. of Plants 1954 Census
Hampden, Mass.	4.2	22 Mercer, N. J.	3.2	16 Stratford, N. H.	2.7	4 Lackawanna, Pa.	2.4	10 Shiawassee, Mich.	2.0	5	
Jackson, Mo.	4.1	39 Washington, Pa.	3.2	4 Stephenson, Ill.	2.7	5 Calhoun, Ala.	2.4	1 Morris, N. J.	2.0	31	
Somerset, N. J.	4.1	9 Allen, Ohio	3.1	6 McLean, Ill.	2.7	9 Lycoming, Pa.	2.3	6 Total Above Counties	895.8	4,198	
Norfolk, Mass.	3.7	21 Worcester, Mass.	3.0	33 Grant, Ind.	2.7	13 Washtenaw, Mich.	2.3	8 % of USA Total	83.4	72.1	
Delaware, N. Y.	3.7	1 Racine, Wisc.	2.9	22 Erie, Pa.	2.6	4 Litchfield, Conn.	2.2	17 Bronx, N. Y.	2.2	17	
Hennepin, Minn.	3.4	49 Lake, Ill.	2.9	21 Cabell, W. Va.	2.6	9 Windham, Conn.	2.2	7 Kane, Ill.	2.2	6	
Nassau, N. Y.	3.3	65 Greene, Tenn.	2.9	12 Richland, Ohio	2.6	1 Bronx	2.2	10 Bartholomew, Ind.	2.2	6	
Monmouth, N. J.	3.3	24 Hillsborough,		2 Fayette, Ind.	2.6	10 Berks, Pa.	2.1	11 Muskingum, Ohio	2.1	3	
Chemung, N. Y.	3.3	2 N. H.	2.8	7 Trumbull, Ohio	2.5	7					
Seneca, Iff.	3.3	7 Seneca, Ohio	2.8	3 McHenry, Ill.	2.5	7					
Providence, R. I.	3.2	20 Beaver, Pa.	2.8	6 Westmoreland, Pa.	2.5	9					

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Electrical Manufacturing

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S.I.C. No.	NUMBER OF PLANTS*	S.I.C. No.	NUMBER OF PLANTS*
19 ORDNANCE EQUIPMENT	265	361 ELECTRICAL GENERATING, TRANSMISSION, DISTRIBUTION & INDUSTRIAL APPARATUS	3,987
Includes Guns and Gun Turrets, Tanks, Guided Missiles, Sighting and Fire-Control Equipment, etc.		Includes Wiring Devices, Electrical Measuring Instruments, Motors and Generators, Transformers, Switchgear, Industrial Controls, Electric Welding Apparatus, etc.	
343 HEATING APPARATUS	271	362 ELECTRICAL APPLIANCES	661
347 LIGHTING EQUIPMENT	412	Includes Ranges, Rotisseries, Waffle Irons, Toasters, Percolators, Mixers, Fans, Grills, etc. (See also Group 358)	
Includes Fluorescent Fixtures, Industrial Lighting Equipment, Floor Lamps, Floodlights, Stage Lights, etc.		363 INSULATED WIRE & CABLE	328
352 AGRICULTURAL MACHINERY	320	364 ELECTRICAL EQUIPMENT FOR MOTOR VEHICLES, AIRCRAFT & RAILWAY LOCOMOTIVE & CARS	156
Includes Milking Machines, Barn Cleaners, Chicken Brooders, Feed Mixers, Electric Fences, etc.		366 COMMUNICATION EQUIPMENT & RELATED PRODUCTS	2,478
353 CONSTRUCTION & MINING MACHINERY	348	Includes Radio and TV Equipment, Radar Apparatus, Recorders, Telephone and Telegraph Equipment, other Communications Apparatus, etc.	
354 METALWORKING MACHINERY 1,059		371 MOTOR VEHICLES & MOTOR VEHICLE EQUIPMENT	80
Includes Machine Tools, Metalworking Machinery and Portable Tools.		372 AIRCRAFT AND PARTS	424
355 SPECIAL INDUSTRIAL MACHINERY	2,181	373 SHIP AND BOAT BUILDING	22
Includes Food Processing Machinery, Bakery Machinery, Dairy Machinery, Textile Machinery, Woodworking Machinery, Paper Industries Machinery, Printing Trades Machinery, etc.		374 RAILROAD EQUIPMENT	25
356 GENERAL INDUSTRY MACHINERY & EQUIPMENT 2,241		381 INSTRUMENTS (LABORATORY, SCIENTIFIC AND ENGINEERING)	918
Includes Pumps and Compressors, Elevators, Forklifts, etc., Industrial Trucks and Tractors, Industrial Furnaces and Ovens, Packaging Machinery, etc.		382 INSTRUMENTS (MECHANICAL & CONTROLLING)	543
357 OFFICE & STORE MACHINERY & DEVICES	420	383 OPTICAL INSTRUMENTS	127
Includes Business Machines, Vending and Other Coin-Operated Machines, Scales and Balances, etc.		384 SURGICAL, MEDICAL AND DENTAL INSTRUMENTS	271
358 SERVICE-INDUSTRY & HOUSEHOLD MACHINERY	843	385 PHOTOGRAPHIC EQUIPMENT	224
Includes Domestic and Commercial Laundry Equipment, Sewing Machines, Vacuum Cleaners, Refrigerators, Refrigeration Machinery and Air-Conditioning Units, Measuring and Dispensing Pumps, etc.		387CLOCKS AND CLOCKWORK-OPERATED DEVICES	70
*By principal and secondary products.		388 MISCELLANEOUS MANUFACTURING INDUSTRIES	225
ELECTRICAL MANUFACTURING Market Research provides special field studies and application surveys for effective sales planning to the S.I.C. Groups listed above. Ask your advertising agency to get the facts on your specific market areas.		Includes Electrical Musical Instruments, Games, Toys, Beauty-Shop Equipment, Signs and Advertising Displays, etc.	

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SALES MANAGEMENT



BURIED IN "ELECTRICAL" IS NATION'S FIFTH LARGEST INDUSTRY

The world has changed a bit since Ben Franklin flew his kite and Edison invented the electric light. We have telephones, radio, television, automation, radar, sonar, computers, guided missiles, earth satellites and other wonders thanks to radio-electronics—now fifth largest industry in the nation.

If you are looking for facts and figures on this young Goliath in the *Standard Industrial Classifications*, they lie buried in "Electrical", code #36. It isn't easy to conceal an industry employing 1.5 million people with sales at 11.5 billion dollars annually. What will S.I.C. do when, within a decade, sales reach 22 billion dollars as radio-electronics continues to be the fastest growing of all U.S. industries?

Radio-electronics is big, basic and diversified. It is a business with more than 4,000 manufacturers and suppliers scattered over the length and breadth of our country. It already employs almost 100,000 of the nation's 500,000 engineers and needs more to create and manage its remarkable plants and factories.

Electronics has changed modern warfare and has become vital to defense. Electronics is changing commerce and industry. Electronics is influencing the lives of all of us and will change our living patterns and standards even more in the years to come.

Investors consider electronics as having a limitless future. Today, the field is served by a number of important business publications and a big professional Society. *The Institute of Radio Engineers* now has more than 50,000 engineer members as well as 10,000 student members.

By strictest definition, that which utilizes the movement of electrons is electronic. Back in the dot-and-dash era, electrical engineers reluctantly admitted that radio might have some limited value in ship-to-shore communication. Still in the dot-and-dash era, S.I.C. ignores radio-electronics' existence—even if it is the child that outgrew its parent . . . for, by popular definition, electronics has come to mean *everything electrical*.

The next time the Federal Government and the Department of Commerce look over the 1700 *Standard Industrial Classifications*, may they examine code #36 more closely! A giant like radio-electronics can't be buried and expected to rest in peace. You can bet your bottom transistor on that.

THE INSTITUTE OF RADIO ENGINEERS Proceedings of the IRE

Adv. Dept., 1475 Broadway, New York 36, New York
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Manufacture of Electrical Machinery—(Cont'd)

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 36

Some of the biggest gains among major industries took place in electrical machinery. For example, all the industries under code 361 showed rises in excess of 30%. Top increase was in insulated wire and cable, reflecting the great, continuing expansion of the public utility industry, which boomed most of the basic products of heavy electri-

cal apparatus. Insulated wire was up 63%. Wiring devices and supplies, carbon and graphite products, electrical measuring instruments, transformers, electrical welding apparatus had gains of 35% or higher. 1954 value of products shipped for code 3661 is estimated. (See explanation on page 70.)

S. I. C. Code Num- ber	INDUSTRY	Gross Sales		Employment		S. I. C. Code Num- ber	INDUSTRY	Gross Sales		Employment	
		No. of Plants (1954 Cen- sus)	Value Prod- ucts Shipped (\$ million)	1954 Cen- sus	SM Est. 1/1/57			1954 Cen- sus	Value Prod- ucts Shipped (\$ million)	1954 Cen- sus	SM Est. 1/1/57
361	<i>Electrical industrial apparatus</i>					366	<i>Communication equipment</i>				
3611	Wiring devices and supplies	395	584	788	43.2	51.6	Radios and related products	1,753	5,661	5,717	294.0
3612	Carbon and graphite products	53	111	150	8.3	10.0	Electronic tubes	167	710	780	80.5
3613	Electrical measuring instruments	303	359	483	33.0	38.1	Phonograph records	143	88	104	6.2
3614	Motors and generators	309	1,389	1,861	112.0	124.0	Telephone and telegraphic equip.	74	797	940	84.7
3615	Transformers	164	686	933	41.0	43.8	Communication equipment, n. e. c.	141	100	129	10.1
3616	Electrical control apparatus	452	1,097	1,481	79.3	88.5					13.8
3617	Electrical welding apparatus	119	189	229	8.2	10.3					
3619	Elec. industrial apparatus, n. e. c.	235	183	247	15.0	15.8					
3621	Electrical appliances	360	796	1,073	46.6	42.6					
3631	Insulated wire and cable	136	323	827	14.4	15.5					
3641	Engine electrical equipment	169	587	781	46.3	48.8					
3681	Electric lamps (bulbs)	66	326	431	22.0	26.6					

Manufacture of Transportation Equipment—S.I.C. 37

SM Estimates for 100 Counties with 91% of 1956 Employment

COUNTY and STATE	SM Employ- ment 1/1/57 (thou.)	No. of Plants 1954 Cen- sus										
Los Angeles, Cal.	240.4	787	Hartford, Conn.	39.9	41	St. Louis, Mo.	29.0	39	Niagara, N. Y.	18.8	8	Newport News,
Wayne, Mich.	186.2	194	Baltimore, Md.	37.8	33	Bergen, N. J.	23.9	15	Cobb, Ga.	18.5	1	Va.
Cuyahoga, Ohio	58.8	103	Sedgwick, Kan.	37.4	40	Suffolk, N. Y.	23.2	59	Franklin, Ohio	17.0	21	Fairfield, Conn.
Genesee, Mich.	53.2	18	Oakland, Mich.	31.4	51	Erie, N. Y.	23.2	38	Nassau, N. Y.	14.3	57	Jackson, Mo.
San Diego, Cal.	49.8	45	Marion, Ind.	30.4	36	Hamilton, Ohio	23.0	24	Delaware, Pa.	14.2	14	Allegheny, Pa.
Cook, Ill.	48.5	192	Tarrant, Tex.	29.4	28	St. Joseph, Ind.	21.6	12	Macomb, Mich.	12.1	34	Lucas, Ohio.
King, Wash.	46.3	58	Dallas, Tex.	26.3	24	Ingham, Mich.	20.5	8	Kent, Mich.	10.3	19	

SM, 1957.

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REVIEW

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Manufacture of Transportation Equipment—(Cont'd)

Estimates for 100 Counties with 91% of 1956 Employment

COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus
Summit, Ohio . . .	9.8	11	Camden, N. J. . . .	7.6	8	New Haven, Conn. . . .	5.7	27	Winnebago, Ill. . . .	3.8	11	Lycoming, Pa. . . .	2.0	2
Washtenaw, Mich. . .	9.6	13	Middlesex, Mass. . . .	7.4	23	Monroe, N. Y. . . .	5.2	8	Davidson, Tenn. . . .	3.7	8	Bucks, Pa. . . .	2.8	9
Wyandotte, Kan. . .	9.4	4	Butler, Ohio	7.1	10	Maricopa, Ariz. . . .	8.2	11	New Castle, Del. . . .	3.7	6	Santa Clara, Calif. . .	2.8	6
Tulsa, Okla. . . .	9.4	18	Alameda, Calif. . . .	6.0	49	Clay, Mo. . . .	4.9	4	Mobile, Ala. . . .	3.6	20	Hudson, N. J. . . .	2.7	23
Kenosha, Wis. . . .	9.2	4	Lorain, Ohio	6.8	9	Lake, Ind. . . .	4.7	9	Fresno, Calif. . . .	3.6	13	Howard, Ind. . . .	2.7	3
Philadelphia, Pa. . .	9.2	38	Kings, N. Y. . . .	6.5	88	La Porte, Ind. . . .	4.6	7	Berks, Pa. . . .	3.6	10	De Kalb, Ga. . . .	2.6	4
Allen, Ind. . . .	8.9	7	Jackson, Mich. . . .	6.1	27	Bay, Mich. . . .	4.5	8	Schenectady, N. Y. . .	3.5	4	San Francisco, Calif. .	2.8	28
Vanderburgh, Ind. . .	8.9	9	Onondaga, N. Y. . .	6.0	9	Norfolk, Mass. . . .	4.3	11	Oneida, N. Y. . . .	3.4	5			
Montgomery, Ohio . .	8.8	27	Essex, Mass. . . .	6.0	32	Trumbull, Ohio	4.2	7	Fulton, Ga. . . .	3.3	13	Total Above Counties . . .	1,806.7	3,042
Washington, Md. . .	8.6	2	Delaware, Ind. . . .	6.0	4	Jefferson, Ky. . . .	4.2	6	Duval, Fla. . . .	3.2	18	% of USA Total . . .	91.3	55.7
Jefferson, Ala. . . .	8.3	12	Calhoun, Mich. . . .	6.0	8	Ramsey, Minn. . . .	4.2	15	Alamance, N. C. . . .	3.2	1			
Union, N. J. . . .	8.1	17	Oriana, La. . . .	5.9	33	Clark, Ohio	4.1	7	Monroe, Mich. . . .	3.1	2			
Saginaw, Mich. . . .	8.0	14	Rock, Wis. . . .	5.8	7	Jackson, Miss. . . .	4.0	7	Sacramento, Calif. . .	3.1	8			
Erie, Pa. . . .	7.9	9	Westchester, N. Y. .	5.8	19	Lehigh, Pa. . . .	4.0	2	Berrien, Mich. . . .	3.1	11			
Milwaukee, Wis. . .	7.8	27	Essex, N. J. . . .	5.8	30	Polk, Iowa	3.9	10	Norfolk, Va. . . .	3.0	17			

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The end result of most industrial production is the sale of products or services to consumers. For up-to-date basic data on consumers—in city, county, metropolitan area, state, regional and national markets—see SALES MANAGEMENT May 10 Survey of Buying Power.

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Manufacture of Transportation Equipment—(Cont'd)

S.M. Estimates, 1956, for 4-Digit Industries of S.I.C. 37

Although automobiles showed a substantial rise, largest gains were made by locomotives and parts and railroads and street cars, the result largely of long-deferred equipment replacements as well as of active, rising business

backgrounds. Locomotives and parts increased about 50% in value of products shipped, and railroad and street cars jumped about 70%. 1954 value of products shipped for codes 3717, 3731 and 3732 is estimated. (See page 70.)

S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales		Employment (thous.)		S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales		Employ- ment (thous.)	
			1954 Cen- sus	S.M. Est. 1/1/57	1954 Cen- sus	S.M. Est. 1/1/57				1954 Cen- sus	S.M. Est. 1/1/57	1954 Cen- sus	S.M. Est. 1/1/57
371	<i>Motor vehicles and equipment</i>												
3713	Truck and bus bodies	564	233	286	18.7	23.5	3722	Aircraft engines	234	3,180	3,638	167.4	173.2
3715	Truck and trailers	130	306	462	16.4	21.6	3720	Aircraft equipment, n. e. c.	1,082	2,343	2,741	180.9	172.8
3716	Automobile trailers	278	231	288	11.1	14.8	373	<i>Ships and boats</i>					
3717	Motor vehicles and parts	1,226	8,475	10,422	649.3	651.8	3731	Ship building and repairing	385	1,078	1,131	108.5	107.5
372	<i>Aircraft and parts</i>						3732	Boat building and repairing	1,154	154	184	18.9	19.1
3721	Aircraft	72	6,267	7,155	487.6	487.6							

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Market Statistics, Inc., the research department of SALES MANAGEMENT, the May 10 Survey of Buying Power and the July 10 Survey of Industrial Buying Power, has the largest existing file of current data on the regional distribution of economic resources in the United States and Canada. In

response to many requests, we have established a staff of experienced plant location experts who will draw on this file (compiled with the assistance of thousands of chambers of commerce, planning agencies and state employment commissions) in the selection of plant sites. For details, write:

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As a result, A.I. had a total of 103 articles on new automotive and aviation design developments in 1956—82 of them exclusive. There were 79 features on new production developments in these fields—44 of them exclusive. Totals in both categories far outstripped the next highest publication.

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	Subscribers
Cars, trucks, buses, trailers, aircraft	4953
Engines (gasoline, diesel, aircraft)	4661
Automotive and aviation parts and accessories	6917
Tractors, agricultural and construction equipment	1869
Production equipment	2116
Materials and supplies	1671
(includes duplication, since some companies make more than one type of product)	

SUBSCRIBERS IN TYPICAL COMPANIES

General Motors Corp. (and divisions)	1480
Ford Motor Company	1160
Bendix Aviation Corp.	241
International Harvester Co.	397
North American Aviation Corp.	207
Continental Motors Corp.	102
Wright Aeronautical Div.	87
Caterpillar Tractor Co.	261
Thompson Products, Inc.	77

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The only complete source of automotive and aviation statistics and reference data—the one medium for tapping the buying power of these vast and growing manufacturing fields. There will be over 150 pages of factory specifications, production and registration totals, and other useful data arranged for fingertip reference. Statistics and data are sectionalized for ready reference. Closing date: Feb. 20, 1958.



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JULY 10, 1957



Manufacture of Transportation Equipment—(Cont'd)

S.M. Estimates, 1956, for 4-Digit Industries of S.I.C. 37—(Continued)

S. I. C. Code Number	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)		S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales Value Prod- ucts Shipped (\$ million)		Employment (thous.)	
			1954 Cen- sus	S.M. Est. 1/1/57	1954 Cen- sus	S.M. Est. 1/1/57				1954 Cen- sus	S.M. Est. 1/1/57	1954 Cen- sus	S.M. Est. 1/1/57
574	Railroad equipment						3742	Railroad and street cars	57	496	843	30.7	35.4
3741	Locomotives and parts	29	429	642	20.9	19.7	3781	Motorcycles and bicycles	46	96	109	7.1	7.7

Manufacture of Instruments and Related Products—S.I.C. 38

S.M. Estimates for 100 Counties with 92% of 1956 Employment

COUNTY and STATE	S.M. Employ- ment 1/1/57 (thous.)	No. of Plants 1954 Cen- sus												
Monroe, N. Y.	44.6	50	Nassau, N. Y.	3.2	37	Bronx, N. Y.	1.2	38	Richmond, N. Y.	.5	2	Jefferson, N. Y.	.3	6
Cook, Ill.	24.5	275	Suffolk, Mass.	3.0	48	Westmoreland, Pa.	1.2	1	Jackson, Mo.	.4	17	Albany, N. Y.	.2	2
Hennepin, Minn.	14.1	31	Norfolk, Mass.	2.8	17	Dinwiddie, Va.	1.1	2	Dane, Wis.	.4	4	Washington, Ore.	.2	2
Los Angeles, Cal.	12.7	280	Kent, Mich.	2.8	3	Weatchester, N. Y.	1.1	39	Delaware, Ohio	.4	2	Union, Ohio	.2	2
Bergen, N. J.	10.4	38	Bucks, Pa.	2.4	6	Lackawanna, Pa.	1.1	3	Tulsa, Okla.	.4	17	New London, Conn.	.2	3
Philadelphia, Pa.	9.8	103	Providence, R. I.	2.2	22	Baltimore, Md.	1.1	18	Ontario, N. Y.	.4	1	Davidson, Tenn.	.2	1
Queens, N. Y.	9.4	108	St. Louis, Mo.	2.2	34	Berks, Pa.	.9	3	Taylor, Tex.	.4	4	Dickinson, Mich.	.2	1
New York N. Y.	6.2	220	Knox, Tenn.	2.2	3	Orange, Cal.	.9	7	La Porte, Ind.	.4	4	Stark, Ohio	.2	3
Milwaukee, Wis.	6.0	24	Erie, N. Y.	2.1	22	Union, N. J.	.9	12	Montgomery, Md.	.3	10	Delaware, Pa.	.2	8
Middlesex, N. J.	5.6	10	Erie, Pa.	1.8	5	Clearfield, Pa.	.8	1	Marion, Ind.	.3	12	Rensselaer, N. Y.	.2	2
Middlesex, Mass.	5.4	48	Passaic, N. J.	1.7	11	Niagara, N. Y.	.8	2	Summit, Ohio	.3	8	King, Wash.	.2	24
New Haven, Conn.	5.1	26	Scott, Iowa	1.7	1	York, Pa.	.7	2	San Francisco, Cal.	.3	20	Montgomery, Va.	.2	2
Fairfield, Conn.	5.0	40	Winnebago, Ill.	1.6	4	Suffolk, N. Y.	.7	21	Windham, Conn.	.3	1	Cabell, W. Va.	.2	3
King, N. Y.	4.8	127	Lancaster, Pa.	1.5	6	Dallas, Tex.	.7	23	Sussex, Del.	.3	1	Fayette, Pa.	.2	1
Allegheny, Pa.	4.3	28	Franklin, Ohio	1.5	14	Hampden, Mass.	.7	4	St. Joseph, Ind.	.3	5	District of Columbia	.2	10
Broome, N. Y.	4.2	8	Litchfield, Conn.	1.5	5	Alameda, Cal.	.7	28	Onondaga, N. Y.	.3	8	Total Above Counties	268.5	2,504
Worcester, Mass.	4.1	16	La Crosse, Wis.	1.4	1	Harris, Tex.	.7	30	Clark, Ohio	.3	3	% of USA Total	91.7	73.4
La Salle, Ill.	4.0	1	Hamilton, Ohio	1.4	28	Durham, N. C.	.7	2	Dade, Fla.	.3	8			
Harford, Conn.	3.7	19	Bristol, Mass.	1.4	8	Richland, Ohio	.6	4	Mason, Mich.	.3	1			
Essex, N. J.	3.0	53	Wayne, Mich.	1.3	48	Campbell, Ky.	.6	1	Lucas, Ohio	.3	10			
Cuyahoga, Ohio	3.3	53	Montgomery, Pa.	1.2	15	San Diego, Cal.	.5	10	Hampshire, Mass.	.3	3			
Washtenaw, Mich.	3.3	11	Hudson, N. J.	1.2	20	Denver, Colo.	.5	21						

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**sales leads from engineers
help you get more selling help from
advertising in**



**S.I.C.
38**

INSTRUMENTS

in.....



DESIGN

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NEP **BPA**

SALES MANAGEMENT

MARKET DATA

ADVERTISING READERSHIP

INQUIRIES

ADVERTISING

READERSHIP

Modern Railroads

A Watson Publication



Provides Circ. Statements subject to audit by
Business Publications Audit of Circulation, Inc.



Published monthly by the Watson Publications, Inc.,
201 N. Wells St., Chicago 6, Ill. State 2-4121.

PERSONNEL

Publisher—David R. Watson,
Editor—Frank Richter,
Business Manager—Roy Gurley.
Production Manager—Greg Minogue.
Advertising Production Manager—Helen Dudek.

REPRESENTATIVES

Chicago—Roy Gurley, 201 N. Wells St. State 2-4121.
New York 17—John Sillit, R. Potts, 441 Lexington Ave., Rm. 1102, Murray Hill 2-8351.
New York and Eastern Pennsylvania—John M. Sillit, 441 Lexington Ave., Rm. 1102, New York 17, N. Y. Morrisania 2-2551.
Cleveland 14—V. G. Brettman, 459 The Arcade, Superior 1-1950.
Pacific Coast—W. R. McIntyre, 423 First Trust Bldg., Pasadena 1, Calif. Ryan 1-6981.
San Francisco—W. R. McIntyre & Associates, 1085 Monadnock Bldg., 601 Market St. Douglas 2-4475.

MAILING INSTRUCTIONS

Send plates and insertion orders to the Advertising Production Manager at the Chicago office. Ship inserts direct to Modern Railroads, c/o Webb Line Printing Co., 511 South Sangamon St., Chicago, Ill.

COMMISSION AND CASH DISCOUNT

15% to agencies; 2% 10 days from billing date.
Net 30 days.

ADVERTISING RATES

Effective January, 1955 Issue. (Card No. 8.)

Rates received December 16, 1954.

	1 ft.	3 ft.	6 ft.	12 ft.
1 page	595.00	550.00	525.00	495.00
1 1/2 page	300.00	280.00	270.00	250.00
1 1/4 page	150.00	140.00	135.00	125.00
18 or more pages, per page			475.00	
24 or more pages, per page			450.00	

(*) Equivalent to 2/3 page in 7 x 10" publications.

(†) Equivalent to 1/3 page in 7 x 10" publications.

Combination rates may be earned with Appliance Manufacturer and Modern Industrial Press beginning January, 1954.

COVERS

Rates include black and 1 process color and bleed. Added process colors at regular color rates.
1st cover (non-cancellable) 750.00
2nd cover (non-cancellable) 700.00
3rd cover (non-cancellable) 600.00
4th cover (non-cancellable) 500.00

SPECIAL POSITIONS-INSERTS-COLOR AND BLEED

Rates on request.

ISSUANCE AND CLOSING DATES

Published monthly; issued 1st of publication month. Closing date for space reservations and color requirements on or before 1st of month preceding date of publication. Where proofs are required, copy and instructions must be in Chicago office 10 days before closing date. Closing date for plates on or before 5th of month preceding date of publication.

CIRCULATION

Established 1945.

B.P.A. 12-31-56

Total controlled circulation (6 mos. aver.) 22,742

Advertisers, agencies, exchanges, adv. prospects 1,101
Samples 2,019

TERRITORIAL DISTRIBUTION

Net controlled, December issue	22,718
New England	736
West South Central	1,563
Middle Atlantic	2,888
Mountain States	970
East North Central	3,542
Pacific States	1,486
West North Central	2,559
U. S. Territories	62
South Atlantic	3,512
Canada	1,040
East South Central	1,556
Foreign	816

BUSINESS ANALYSIS OF CIRCULATION

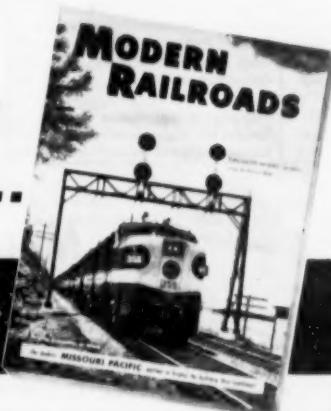
Administrative and financial executives—Presidents, vice presidents, secretaries, comptrollers, treasurers and auditors 1,814. Operating, management and traffic officials: General managers, superintendents, traffic managers, station and terminal managers and superintendents 1,101. Mechanical departments—General mechanical departments—chief mechanical officers, mechanical superintendents, engineers, designers, chief draftsmen, master mechanics and mechanical inspectors 2,172; motive power departments—superintendent motive power, general foremen and road foremen, locomotive diesel supervisors 1,707; car departments—superintendents, general foremen, foremen and inspectors and foremen—car companies 1,719; shops and roundhouses—shop superintendents, general foremen locomotive shops and car shops, master car builders, roundhouse foremen and machine shop foremen 1,827; locomotive and car builders—other than railroads) design, mechanical and electrical engineers, chief draftsmen and shop superintendents 287. Engineering, bridge and roadway departments—General engineering departments—chief civil and division engineers, construction and maintenance of way engineers, water service engineers, architects, master carpenters, chief draftsmen engineering department 2,335; track and roadway departments—general district and division roadmasters, supervisors and inspectors, track and maintenance of way 2,203; bridges and builders departments—engineers, superintendents, general foremen, chief draftsmen and supervisors, bridges and builders 988; electrical, signaling and communications departments, electrical engineers and superintendents, chief electricians, foremen and electric supervisors, supervisors, signals, radio, communications, telephone and telegraph and signal maintenance 2,000. Purchasing and stores departments—Purchase, vice president, chief purchasing officers and purchasing agents 314; general district and division storekeepers, superintendents, supervisors, scrap and reclamation 409. Other railroad employees and association officials 338.

FOR ADVERTISING

impact

TO THE
RAILROAD
INDUSTRY...

USE THE ONE IMPRESSION
POWER THAT
SPARKS
PROGRESSIVE
RAILROADING..



"THE BEST IN RAILROADING"

- ✓ GIVES advertisers thorough and penetrating coverage of ALL key railroad buying influences in ALL departments. (Exclusive)
- ✓ HAS 22,513 BPA audit distribution to key railroad men. MODERN RAILROADS IS VERIFIED REGULARLY.
- ✓ AVERAGES over 4.5 readers per copy — making for a multiple readership of over 100,000 key railroad men.
- ✓ PROVIDES STARCH advertising readership reports. (Exclusive)
- ✓ EMPLOYS R. O. EASTMAN for editorial readership research. (Exclusive).
- ✓ SUPPLIES an advertising merchandising package to salesmen in the field. (Exclusive)
- ✓ IS THE KEEN ADVERTISER'S CHOICE. More advertisers INVEST more dollars—issue-by-issue—in MODERN RAILROADS than in any other railroad magazine—and more dollars than in the three other monthly railway publications combined.

WRITE TODAY FOR NIAA MEDIA AND MARKET OUTLINE

MODERN RAILROADS BPA

201 N. WELLS STREET,
CHICAGO 6, ILLINOIS



Instruments and Related Products—(Cont'd)

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 38

The 10 four-digit components of this industry had a range of gains from 9% for optical instruments to 25% for scientific instruments. Appropriations for scientific experimentation are believed to be at an all-time high, stimulated anew in recent years by further development of

atomic, hydrogen and other types of power. The unprecedented demand for the services of doctors and dentists has produced a substantial rise in equipment purchases. Surgical and medical instruments are up 22%, dental equipment and supplies 20%.

S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales		Employment (thous.)	S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales		Employment (thous.)					
			Value Prod- ucts Shipped (\$ million)						Value Prod- ucts Shipped (\$ million)							
			1954 Cen- sus	SM Est. 1/1/57					1954 Cen- sus	SM Est. 1/1/57						
3811	Scientific instruments.....	370	661	726	45.3	86.8	3843	Dental equipment and supplies.....	197	79	94	7.1	7.3			
3821	Mech. measuring instruments....	614	804	966	69.4	73.5	3881	Ophthalmic goods.....	230	158	172	18.5	22.3			
3831	Optical instruments.....	206	118	128	12.7	11.7	3881	Photographic equipment.....	440	667	1,014	59.1	59.0			
384	Medical equip. and supplies.....	200	63	78	6.6	7.1	387	Watches and clocks.....								
3841	Surgical and medical instruments.....	200	63	412	24.5	26.5	3871	Watches and clocks.....	145	330	363	25.7	23.4			
3842	Surgical appliances and supplies.....	682	338				3872	Watchcases.....	64	35	38	3.8	3.7			

Miscellaneous Manufactures—S.I.C. 39

SM Estimates, 1956, for 4-Digit Industries of S.I.C. 39

Varied gains were experienced in this group, from pianos' 9% to 30% for plastics products not elsewhere classified. The boom in plastics goes on, powered by the great variety of forms, shapes and novelty products to which plastics

lend themselves and by the constant development of new and improved ideas in this field. 1954 value of products shipped for codes 3913 and 3954 is estimated. (See explanation on page 70.)

S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales		Employment (thous.)	S. I. C. Code Num- ber	INDUSTRY	No. of Plants (1954 Cen- sus)	Gross Sales		Employment (thous.)					
			Value Prod- ucts Shipped (\$ million)						Value Prod- ucts Shipped (\$ million)							
			1954 Cen- sus	SM Est. 1/1/57					1954 Cen- sus	SM Est. 1/1/57						
391	Jewelry and silverware.....					3953	Hand stamps and stencils.....	453	46	84	5.7	6.0				
3911	Jewelry (precious metal).....	1,327	258	294	23.6	22.5	3964	Artists' materials.....	98	24	28	1.9	2.0			
3912	Jewelers' findings.....	234	69	79	5.4	8.1	3965	Carbon paper and inked ribbons.....	84	81	98	4.7	5.3			
3913	Lapidary work.....	333	34	38	1.6	1.8	396	Costume jewelry and novelties.....								
3914	Silverware and plated ware.....	207	211	244	17.3	16.9	3961	Costume jewelry.....	1,127	239	274	27.7	28.8			
395	Musical instruments and parts.....					3962	Artificial flowers.....	471	50	53	7.3	6.9				
3931	Pianos.....	27	68	70	5.0	6.1	3963	Buttons.....	409	65	71	8.5	6.9			
3932	Organs.....	31	29	38	1.8	2.3	3964	Needles, pins, and fasteners.....	357	203	221	23.2	22.2			
3933	Piano and organ parts.....	40	36	39	3.0	2.7	3971	Plastics products, n. e. c.	2,439	1,193	1,851	92.0	94.7			
3938	Musical instruments, n. e. c.	144	40	58	4.9	6.7	398	Miscellaneous manufactures.....								
394	Toys and sporting goods.....					3981	Brooms and brushes.....	600	105	211	16.8	18.2				
3941	Games and toys, n. e. c.	886	283	450	36.2	42.0	3982	Cork products.....	35	40	46	2.1	1.9			
3942	Dolls.....	484	143	171	16.1	18.2	3983	Matches.....	20	61	69	6.2	6.3			
3943	Children's vehicles.....	60	77	88	0.3	7.2	3984	Candles.....	69	29	33	3.0	2.9			
3949	Sporting and athletic goods.....	1,031	294	352	28.9	31.8	3985	Fireworks and pyrotechnics.....	78	22	26	2.6	2.8			
3950	Office supplies.....					3986	Jewelry and instrument cases.....	166	65	72	8.8	8.1				
3951	Pens and mechanical pencils.....	140	129	150	10.9	11.7	3987	Lamp shades.....	325	39	47	5.0	5.5			
3962	Lead pencils and crayons.....	80	58	64	5.0	5.2	3988	Merchandise's goods.....	563	166	165	16.7	16.7			

© SM, 1957.

ALL SURVEY DATA are available on IBM cards at nominal cost. These cards, as well as IBM listings of data in the May 10 "Survey of Buying Power and the "Survey of Industrial Buying Power," regrouped according to your sales territories, may be obtained from Market Statistics, Inc., 432 Fourth Avenue, New York 16, N.Y., Phone MUrray Hill 4-3559.



How American Machinist HELPS YOU SELL the \$119 BILLION METALWORKING MARKET

What is the Metalworking* Industry

Metalworking is over 40% of all Manufacturing. It comprises 8 divisions manufacturing metal products, such as Automobiles, Agricultural Implements, Aircraft, Electrical Machinery, Appliances etc.

These 8 divisions make all the machinery and equipment every industry uses . . . all the ordinance for defense . . . all the aircraft . . . all automobiles, appliances and other "most wanted" consumer products: *American Machinist* is specifically edited to serve the production function throughout all types of Metalworking plants.

*Metalworking is not to be confused with Metalproducing which uses little or none of the materials, equipment, parts, and supplies essential to Metalworking manufacturing plants.

Plants of 50 workers or more

Source: The McGraw-Hill Census of U.S. Manufacturing Plants

SIC No.	Description	No. of Plants	No. of Workers
19	Ordnance and Accessories	84	154,474
25	Furniture and Fixtures	309	69,258
34	Fabricated Metal Products	3,965	907,834
35	Machinery (except electrical)	4,488	1,563,898
36	Electrical Machinery, Equipment and Supplies	1,654	910,131
37	Transportation Equipment	1,445	1,662,201
38	Professional, Scientific, and Controlling Instruments	600	238,489
39	Miscellaneous Manufacturing Industries	411	78,658
	Total	12,956	5,584,943

Where is the Metalworking industry concentrated?

CONCENTRATED IN 12 STATES ARE:

81.5% of U.S. Metalworking plants with 50 or more workers each.

83.5% of the workers in plants of 50 or more workers each.

81.3% of *American Machinist* U.S. paid subscriptions.



81.3% of American Machinist's U.S. subscriptions are focused in the 12 states where 81.5% of Metalworking's plants are concentrated.

... and in addition to its nation-wide, balanced penetration of your U.S. Metalworking markets, *AMERICAN MACHINIST* puts over 5,000 paid subscriptions to work in your increasingly important Canadian and overseas markets.

How Metalworking Will Grow

Now producing at an annual output rate of \$119 billion, it will continue to grow, according to McGraw-Hill's Department of Economics, as the market for metal products is stimulated by growth of population to 205 million by 1970; and capital investment averaging \$4 billion yearly.

Metalworking Capital Spending Plans 1956-1960

(millions of dollars)

	1956-57			Preliminary plans		
	1956	1957	% change	1958	1959	1960
Machinery	1078	1133	+ 5	975	940	938
Elec. Machinery	603	712	+ 18	705	712	762
Autos, trucks, parts	1689	1199	- 29	803	803	803
Transportation equipment (planes, ships, railroads, equip.)	440	686	+ 56	638	415	369
Other metalworking	887	928	+ 5	844	834	854
ALL METALWORKING	4697	4658	- 1	3965	3704	3726
ALL MANUFACTURING	12,787	14,542	+ 14	12,390	11,057	10,601

Who Buys What in Metalworking?

Corporate Management —

is responsible for overall company operations.

Design Engineering —

functions to design products to be manufactured.

Production —

is responsible for all manufacturing operations in Metalworking companies. Directly concerned with initiating the purchase and specifying the brand of all machinery, equipment, tooling, shop supplies and other products required in manufacturing operations, and with developing detailed long-range modernization programs. Production also teams up with design engineering in the selection of the materials and parts for the products it manufactures. Production is the function specifically served by *American Machinist*.

Purchasing —

functions to implement the needs of production departments.

These Readers are your customers

They are Production Engineers and Executives who are responsible for manufacturing efficiently the \$119,000,000,000 worth of products annually produced by this biggest of all industries . . . who are directly concerned with the specification and purchase of all machinery, materials and other products required in Metalworking manufacturing operations.

The operating scope and buying authority of these readers is emphasized by these six basic functions

1. Tooling and Manufacturing
2. Assembly and Finishing
3. Inspection and Testing
4. Planning
5. Co-ordinating
6. Personnel

*More Production responsible engineers and executives subscribe to *American Machinist* than to any other Metalworking magazine.*

Dynamic Editorial Produces Insistent Readership

The Test of a Publication Is the Way it is Edited

American Machinist is all production

- every editorial page is devoted exclusively to the interests and problems of PRODUCTION ENGINEERS AND EXECUTIVES.
- it's first with the newest production ideas, and first in equipment news.

The most qualified editors

editors for *American Machinist* represent the most production-knowledgeable and competent journalists in the Metalworking publications field.

- every editor is Metalworking-production trained; has wide practical experience.
- 19 full-time; 5 part-time editors plus 12 McGraw-Hill News Bureaus and 46 correspondents in principal cities of the world . . . plus an Economics Department unequalled in business publishing.

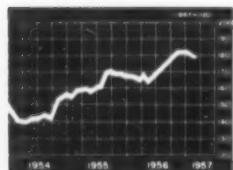
Together these editorial forces produce, every two weeks, a dynamic, informative magazine for Metalworking production.

Unique editorial, acclaimed as more complete and useful

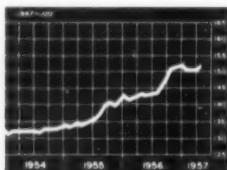
Metalworking production operations and problems are discussed more completely and usefully than in any other magazine because:

- the intimate knowledge of the *American Machinist* editors enables them to find and recognize the news and developments of importance to production engineers and executives.
- every page is tersely edited for quick, easy reading. Headlines tell the reader what's in the article for him. Text employs fewer words to tell more facts per issue—results first, details afterwards.
- liberal use of illustrations tells more than millions of words . . . almost 7,000 illustrations used in 1956 . . . more than any other Metalworking magazine.
- more editorial pages are devoted specifically to helping Metalworking Production Executives and Engineers do a better job — 2,855.43 editorial pages in 1956.
- more news of importance to Metalworking Production Management . . . 9 separate news departments report succinctly on vital developments from every major news front.
- it gives production a sharper insight into current modernization and other problems with editorials that present informed thinking.
- it provides exclusive industry indexes to help production executives and engineers plan more accurately for tomorrow.

PRODUCTION INDEX—yardstick of metalworking production activity



PRICE INDEX—current and vital data on price trends



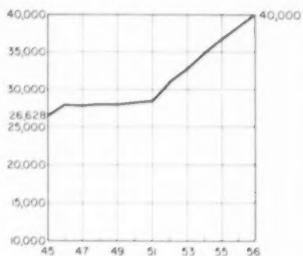
- its reference book sheets provide new basic data not found in today's textbooks.
- the latest management methods—pertinent to the problems Production Engineers and Executives meet and must solve every working day—are reported more fully.
- its "Special Reports to Metalworking" . . . 436 of these published to end of 1956 . . . provide exhaustive, detailed production information not available elsewhere.
- new equipment and materials announcements—nearly 2,300 in 1956—provide more facts on "what's new."
- its annual production preview issue—is the only single source of information on a complete year's new product descriptions—providing a much used reference issue on equipment and materials required by production.

Analysis of Editorial Content January-December '55

Articles on the latest developments in metalworking production methods, equipment and techniques	1,104.50	pages
Articles on new and improved solutions of the administrative problems of metalworking production executives	155.00	"
Description of new metalworking production machinery equipment, materials, and supplies	585.50	"
News of significance to metalworking's production executives	389.56	"
Economic data essential to metalworking production's short and long-range planning	70.00	"
Descriptions of new manufacturer's literature and reviews of new books on subjects of importance to Metalworking production	81.40	"
Editorial comment and opinion	259.50	"
Miscellaneous	102.97	"
TOTAL	2,855.43	"

All Paid Circulation

over 40,000 and steadily growing. Because *American Machinist* provides these far greater editorial values for Metalworking production . . . it attracts thousands more production-responsible subscribers. *American Machinist* is the only all-paid circulation, non-association publication going to the Metalworking Production Engineers and Executives.



Advertiser Acceptance

Again in 1956—advertisers invested more pages and dollars in *American Machinist* to advertise products used and bought by Metalworking production than in any other Metalworking publication . . . over 317 agencies placed 6,243 display advertising pages for 893 companies.

Because—*American Machinist*

- readers are the buyers of the machinery, materials and other products required in Metalworking.
- is edited exclusively for production executives and engineers in Metalworking.
- has the editorial staff best qualified to give Production men a more complete and useful editorial service—geared specifically to their job interest.
- has the largest (and steadily growing) all-paid circulation among Metalworking magazines.

Make sure your 1958
American Machinist schedules
include the 1959
PRODUCTION PLANBOOK
& BUYERS'
GUIDE Issue

Published Mid-September, 1958

First advertising forms
close June 9, 1958



It's read and retained — the latest Metalworking production ideas condensed from regular issues of *American Machinist* into Production Nuggets classified by operations in 10 thumb-indexed, editorial/advertising How-to-do-it sections; followed by a Buyers' Guide (Directory) section containing more "Where-to-buy" information than any other presently published source.

Free Bold Face Listings — of advertisers' names and addresses under appropriate headings in the Buyers' Guide Section, followed by page numbers of advertisements, lead readers directly to products advertised.

Ready-reference copy reviewing your line or advertisements prepared for regular issues of *American Machinist* are ideal for this issue.

See your *American Machinist* District Manager for complete details.
THE McGRAW-HILL MAGAZINE OF METALWORKING PRODUCTION
McGRAW-HILL BUILDING

NEW YORK 36, N. Y.

**American
Machinist**





Total Manufactures

SMA Estimates for 100 counties with 61% of 1956 Employment

COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus	COUNTY and STATE	SM Employment 1/1/57 (thou.)	No. of Plants 1954 Cen-sus
Cook, Ill.	813.0	12,020	Lake, Ind.	106.0	361	Lucas, Ohio	86.4	711	Shelby, Tenn.	48.4	632	Santa Clara, Cal.	35.0	567
Los Angeles, Cal.	718.8	13,881	Worcester, Mass.	106.0	1,470	Middlesex, N. J.	85.5	651	Camden, N. J.	46.2	607	Vanderburgh, Ind.	34.9	219
New York, N. Y.	523.4	25,040	Providence, R. I.	105.7	2,248	Onondaga, N. Y.	85.1	568	Lancaster, Pa.	44.4	612	Madison, Ill.	34.6	199
Wayne, Mich.	445.7	4,362	Suffolk, Mass.	101.9	2,688	San Diego, Calif.	83.1	595	York, Pa.	43.8	624	Suffolk, N. Y.	34.4	567
Philadelphia, Pa.	297.4	5,214	Montgomery, Ohio	99.0	716	Jefferson, Ala.	63.1	608	Multnomah, Ore.	43.5	1,180	Butler, Ohio	33.8	182
Cuyahoga, Ohio	294.0	3,583	Jefferson, Ky.	88.6	899	Montgomery, Pa.	62.4	831	Broome, N. Y.	43.1	289	Denver, Colo.	33.4	890
Kings, N. Y.	235.5	7,851	Summit, Ohio	88.3	869	Niagara, N. Y.	61.0	300	St. Joseph, Ind.	42.9	330	Davidson, Tenn.	32.9	462
Allegheny, Pa.	214.0	8,860	Esex, Mass.	87.6	1,383	Starke, Ohio	88.7	456	Westmoreland, Pa.	42.9	342	Lorain, Ohio	32.7	235
Baltimore, Md.	196.7	1,826	Harris, Tex.	86.8	1,401	San Francisco, Calif.	88.2	1,901	Schenectady, N. Y.	41.4	137	Lackawanna, Pa.	32.6	481
St. Louis, Mo.	193.7	2,489	Dallas, Tex.	88.0	1,308	Oakland, Mich.	57.6	1,051	Winnebago, Ill.	41.4	439	Madison, Ind.	31.9	150
Milwaukee, Wis.	186.4	1,979	King, Wash.	83.0	1,447	Northampton, Pa.	54.7	410	Trumbull, Ohio	40.7	246	Hillsborough,		
Erie, N. Y.	153.1	1,829	Bergen, N. J.	82.8	1,499	Ramey, Minn.	54.0	640	Mercer, N. J.	40.4	443	N. H.	31.5	438
Hamilton, Ohio	150.1	1,680	Genesee, Mich.	81.5	206	Tarrant, Tex.	54.0	601	Erie, Pa.	40.4	422	Henrico, Va.	31.4	433
Essex, N. J.	143.1	2,817	Union, N. J.	81.1	1,008	Weatchester, N. Y.	83.7	1,208	Allen, Ind.	39.0	308	Total Above Counties	9,941.4	157959
Middlesex, Mass.	134.7	2,049	Bristol, Mass.	78.3	1,073	Fulton, Ga.	83.0	866	Luzerne, Pa.	38.9	632			
Hudson, N. J.	133.0	2,363	Franklin, Ohio	78.8	792	Bronx, N. Y.	52.4	2,078	Hamilton, Tenn.	38.7	365			
Hartford, Conn.	131.8	1,168	Passaic, N. J.	72.3	1,487	Sedgwick, Kan.	52.3	439	Guildford, N. C.	37.8	509			
Queens, N. Y.	125.7	2,772	Hennepin, Minn.	71.7	1,511	Kent, Mich.	52.3	776	Lehigh, Pa.	37.0	479	% of USA Total	80.7	54.8
Monroe, N. Y.	113.9	979	Nassau, N. Y.	89.8	1,143	Burke, Pa.	51.9	689	Orleans, La.	38.4	712			
New Haven, Conn.	113.0	1,499	Alameda, Cal.	88.5	1,404	Mahoning, Ohio	51.6	332	Norfolk, Mass.	36.0	583			
Marion, Ind.	109.1	1,102	Hampden, Mass.	88.5	840	Beaver, Pa.	50.0	194	Oneida, N. Y.	36.0	378			
Fairfield, Conn.	107.0	1,479	Jackson, Mo.	88.1	1,146	Delaware, Pa.	49.9	383	Macomb, Mich.	35.1	748			

Mining, Leading Counties

SMA Estimates, 1956, for 100 Counties with 62% of 1956 Employment

COUNTY and STATE	SM Estimates (in thousands)	COUNTY and STATE	SM Estimates (in thousands)	COUNTY and STATE	SM Estimates (in thousands)	COUNTY and STATE	SM Estimates (in thousands)	COUNTY and STATE	SM Estimates (in thousands)	COUNTY and STATE	SM Estimates (in thousands)
Harris, Tex.	20.2	Harlan, Ky.	6.5	Indiana, Pa.	3.8	Natrona, Wyo.	2.5	Taylor, Tex.	2.0		
Luzerne, Pa.	20.1	Lea, N. M.	6.5	Hopkins, Ky.	3.7	Harrison, Ohio	2.5	Bexar, Tex.	1.9		
McDowell, W. Va.	17.0	Wyoming, W. Va.	6.4	Plaquemines, La.	3.7	Dickenson, Va.	2.5	Calcasieu, La.	1.9		
St. Louis, Minn.	14.2	Kanawha, W. Va.	6.2	Hutchinson, Tex.	3.7	Carbon, Pa.	2.5	Jefferson, Tex.	1.9		
Los Angeles, Cal.	12.2	Greene, Pa.	5.8	Westmoreland, Pa.	3.8	Eddy, N. M.	2.4	Jefferson, La.	1.9		
Tulsa, Okla.	11.7	Marion, W. Va.	5.8	Orleans, La.	3.5	McKean, Pa.	2.4	Armstrong, Pa.	1.9		
Logan, W. Va.	11.2	Caddo, La.	5.8	Northumberland, Pa.	3.5	Tazewell, Va.	2.4	Cochise, Ariz.	1.9		
Schuylkill, Pa.	10.4	Fayette, Pa.	5.6	Somerset, Pa.	3.5	Carbon, Utah	2.4	Denver, Colo.	1.9		
Cambria, Pa.	9.8	Wichita, Tex.	5.0	Perry, Ky.	3.4	Gogebic, Mich.	2.3	Iron, Mich.	1.8		
Allegheny, Pa.	9.5	Pike, Ky.	5.0	Shoshone, Idaho	3.4	Belmont, Ohio	2.3	Muhlenberg, Ky.	1.8		
Raleigh, W. Va.	9.4	Nueces, Tex.	4.8	St. Francois, Mo.	3.4	St. Mary, La.	2.3	Gray, Tex.	1.7		
Washington, Pa.	8.1	Marquette, Mich.	4.7	Clearfield, Pa.	3.3	Greenlee, Ariz.	2.2	Lawrence, S. D.	1.7		
Kern, Cal.	8.1	Franklin, Ill.	4.6	Boone, W. Va.	3.2	Sweetwater, Wyo.	2.2	Total Above Counties	489.1		
Fayette, W. Va.	8.0	Sedgwick, Kan.	4.4	Mercer, W. Va.	3.2	Andrews, Tex.	2.2	% of U. S. A. Total	61.5		
Jefferson, Ala.	7.8	Mingo, W. Va.	4.3	Gregg, Tex.	3.1	Greenbriar, W. Va.	2.2				
Lackawanna, Pa.	7.8	Tarrant, Tex.	4.3	Harrison, W. Va.	3.1	Pinal, Ariz.	2.2				
Salt Lake, Utah	7.5	Washington, Okla.	4.2	Ventura, Cal.	3.0	Carter, Okla.	2.1				
Dallas, Tex.	7.5	Polk, Fla.	4.1	Cook, Ill.	3.0	Orange, Cal.	2.1				
Oklahoma, Okla.	7.4	Wise, Va.	4.1	Grant, N. M.	3.0	Lake, Colo.	2.1				
Ector, Tex.	6.9	Buchanan, Va.	4.1	Gila, Ariz.	2.9	Iberia, La.	2.0				
Silver Bow, Mont.	6.8	Monongalia, W. Va.	4.0	Letcher, Ky.	2.8	Terrebonne, La.	2.0				
Midland, Tex.	6.7	Floyd, Ky.	3.8	Itasca, Minn.	2.8	Lafayette, La.	2.0				

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Contract Construction, Leading Counties

SM Estimates for 100 Counties with 55% of 1956 Employment

COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)
Los Angeles, Cal.	127.2	Suffolk, Mass.	16.8	Orleans, La.	10.9	San Bernardino, Cal.	7.7	Anderson, Tenn.	5.4
Cook, Ill.	83.9	New Castle, Del.	15.0	Marietta, Ariz.	10.8	Montgomery, Md.	7.4	Camden, N. J.	5.3
New York, N. Y.	86.7	Jackson, Mo.	14.8	Jefferson, Ala.	10.5	Oklahoma, Okla.	7.3	Guildford, N. C.	5.3
Wayne, Mich.	39.4	Erle, N. Y.	14.7	Multnomah, Ore.	10.5	Duval, Fla.	7.2	Escambia, Fla.	5.3
Philadelphia, Pa.	36.2	Essex, N. J.	14.5	Montgomery, Ohio	9.9	Arlington, Va.	7.0	Madison, Ill.	5.2
Cuyahoga, Ohio	33.7	Middlesex, Mass.	14.4	Fairfield, Conn.	9.8	Sedgwick, Kan.	6.7	Pulaski, Ark.	5.2
Harris, Tex.	32.8	Westchester, N. Y.	14.2	Shelby, Tenn.	9.6	Bucks, Pa.	6.5	Clark, Ind.	5.2
Ingham, Mich.	32.1	San Diego, Cal.	14.1	Hartford, Conn.	9.2	Ramsey, Minn.	6.5	Passaic, N. J.	5.1
Baltimore, Md.	31.4	King, Wash.	13.8	Norfolk, Va.	9.2	Delaware, Pa.	6.5	Oakland, Mich.	5.1
Allegheny, Pa.	28.4	Franklin, Ohio	13.6	Sacramento, Cal.	9.2	Suffolk, N. Y.	6.4	Douglas, Nebr.	5.1
St. Louis, Mo.	22.4	Denver, Colo.	13.4	Lucas, Ohio	8.8	Onondaga, N. Y.	6.1	Pinellas, Fla.	5.1
Dallas, Tex.	20.9	Fulton, Ga.	13.4	Henrico, Va.	8.7	Summit, Ohio	6.1	Riverside, Cal.	5.0
Kings, N. Y.	20.5	Jefferson, Ky.	13.1	Montgomery, Pa.	8.7	Prince Georges, Md.	6.0	Total Above Counties	1,432.0
San Francisco, Cal.	20.2	Hennepin, Minn.	12.7	Lake, Ind.	8.6	Tulsa, Okla.	5.9	% of U. S. A. Total	55.1
Aiken, S. C.	20.0	Orange, Cal.	12.3	Monroe, N. Y.	8.5	Hillsborough, Fla.	5.8		
Nassau, N. Y.	19.7	Bronx, N. Y.	12.1	Tarrant, Tex.	8.4	Jefferson, Tex.	5.8		
Queens, N. Y.	19.3	Hudson, N. J.	12.0	Mecklenberg, N. C.	8.3	Nueces, Tex.	5.8		
Alameda, Cal.	19.0	Marion, Ind.	12.0	Providence, R. I.	8.2	Hamilton, Tenn.	5.8		
District of Columbia	18.9	Bergen, N. J.	11.9	New Haven, Conn.	8.2	Caddo, La.	6.5		
Milwaukee, Wisc.	17.2	Santa Clara, Cal.	11.5	Davidson, Tenn.	8.2	Worcester, Mass.	6.5		
Dade, Fla.	17.2	Contra Costa, Cal.	11.4	Union, N. J.	8.0	Mahoning, Ohio	6.5		
Hamilton, Ohio	16.7	Bexar, Tex.	11.0	Salt Lake, Utah	7.8	East Baton Rouge, La.	6.5		

Public Utilities, Leading Counties

SM Estimates for 100 Counties with 62% of 1956 Employment

COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Estimates (in thousands)
New York, N. Y.	224.6	Milwaukee, Wisc.	21.5	Summit, Ohio	10.8	Albany, N. Y.	7.2	Caddo, La.	5.9
Cook, Ill.	131.8	Alameda, Cal.	20.9	San Diego, Cal.	10.7	Worcester, Mass.	7.2	Jefferson, Tex.	5.9
Los Angeles, Cal.	108.4	Erie, N. Y.	20.7	Shelby, Tenn.	10.6	Monroe, N. Y.	7.2	Luzerne, Pa.	5.7
Philadelphia, Pa.	87.5	Hudson, N. J.	20.6	Bergen, N. J.	10.1	Montgomery, Ohio	7.2	Montgomery, Pa.	5.7
Wayne, Mich.	80.9	Hamilton, Ohio	20.6	Jefferson, Ala.	9.9	Kanawha, W. Va.	7.1	Middlesex, N. J.	5.5
San Francisco, Cal.	43.7	Multnomah, Ore.	19.0	Norfolk, Va.	9.8	Lake, Ind.	7.1	Suffolk, N. Y.	5.5
Suffolk, Mass.	41.6	Hennepin, Minn.	18.5	Oklahoma, Okla.	9.6	Mobile, Ala.	7.0	Dauphin, Pa.	5.4
Baltimore, Md.	40.5	Denver, Colo.	18.3	Tarrant, Tex.	9.5	Essex, Mass.	6.9	Camden, N. J.	5.3
Essex, N. J.	39.3	Middlesex, Mass.	16.1	Mecklenberg, N. C.	9.2	Sacramento, Cal.	6.8	New Castle, Del.	5.3
Cuyahoga, Ohio	36.3	Marion, Ind.	15.2	Salt Lake, Utah	8.9	El Paso, Tex.	6.8	Wyandotte, Kan.	4.8
Allegheny, Pa.	35.3	Bronx, N. Y.	13.1	Hartford, Conn.	8.8	Delaware, Pa.	6.5	Sedgwick, Kan.	4.8
Orleans, La.	35.2	San Mateo, Cal.	13.0	Douglas, Nebr.	8.5	Galveston, Tex.	6.4	San Joaquin, Cal.	4.7
St. Louis, Mo.	34.8	Nassau, N. Y.	13.0	Fairfield, Conn.	8.5	Lehigh, Pa.	6.4	Forsyth, N. C.	4.7
Harris, Tex.	33.2	Jefferson, Ky.	12.6	Duval, Fla.	8.3	Davidson, Tenn.	6.3	St. Joseph, Ind.	4.5
District of Columbia	29.1	Henrico, Va.	12.1	Bexar, Tex.	8.2	Santa Clara, Cal.	6.3	Mercer, N. J.	4.5
Dallas, Tex.	27.7	Franklin, Ohio	12.1	Lucas, Ohio	7.8	Arlington, Va.	6.3	Orange, Cal.	4.4
Fulton, Ga.	26.8	Providence, R. I.	11.8	Union, N. J.	7.8	Polk, Iowa	6.2	Total Above Counties	1,843.8
Kings, N. Y.	24.3	Westchester, N. Y.	11.6	Marietta, Ariz.	7.7	Hampden, Mass.	6.2	% of U. S. A. Total	62.4
Dade, Fla.	23.3	Tulsa, Okla.	11.3	Passaic, N. J.	7.7	Kent, Mich.	6.2		
Queens, N. Y.	22.6	Ramsey, Minn.	11.1	Onondaga, N. Y.	7.4	Hillsborough, Fla.	6.1		
Jackson, Mo.	21.9	New Haven, Conn.	11.0	King, Wash.	7.4	Fresno, Cal.	6.0		

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Wholesale Trade, Leading Counties

SM Estimates for 100 Counties with 67% of 1956 Employment

COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)
New York, N. Y.	299.1	Orleans, La.	20.9	Lucas, Ohio	10.3	Sedgwick, Kan.	6.4	Luzerne, Pa.	4.5
Cook, Ill.	156.1	Multnomah, Ore.	19.5	McKlenberg, N. C.	10.1	Hampden, Mass.	6.4	Orange, Fla.	4.5
Los Angeles, Cal.	112.1	District of Columbia	19.4	Potter, Tex.	10.1	Summit, Ohio	6.4	Hamilton, Tenn.	4.5
Philadelphia, Pa.	71.4	Erie, N. Y.	19.3	Salt Lake, Utah	9.8	Westchester, N. Y.	6.3	Cumberland, Me.	4.4
Wayne, Mich.	58.5	Marion, Ind.	19.1	Norfolk, Va.	9.7	Spokane, Wash.	6.2	Mobile, Ala.	4.4
Suffolk, Mass.	50.2	Denver, Colo.	18.9	Ramsey, Minn.	9.3	Union, N. J.	6.0	St. Joseph, Ind.	4.3
San Francisco, Cal.	48.2	Shelby, Tenn.	17.4	Kane, Ill.	9.3	Passaic, N. J.	5.8	Lake, Ind.	4.2
St. Louis, Mo.	48.2	Jefferson, Ky.	15.6	New Haven, Conn.	9.1	Taylor, Tex.	5.7	San Bernardino, Cal.	4.2
Cuyahoga, Ohio	47.3	Alameda, Cal.	14.7	Polk, Iowa	9.1	Pulaski, Ark.	5.6	Lehigh, Pa.	4.2
Allegheny, Pa.	37.3	Dade, Fla.	14.2	Davidson, Tenn.	9.0	Fresno, Cal.	5.5	Alien, Ind.	4.1
Fulton, Ga.	37.0	Jefferson, Ala.	13.1	Tarrant, Tex.	8.7	Bergen, N. J.	5.3	Mahoning, Ohio	4.1
Dallas, Tex.	32.2	Hudson, N. J.	12.9	Monroe, N. Y.	8.6	Nassau, N. Y.	5.3	Lancaster, Pa.	4.0
Harris, Tex.	28.9	Franklin, Ohio	12.8	Onondaga, N. Y.	8.3	Knox, Tenn.	5.2		
Hennepin, Minn.	28.5	Douglas, Neb.	12.5	Hillsborough, Fla.	7.6	Peoria, Ill.	5.1	Total Above Counties	1,930.6
Baltimore, Md.	27.9	Henrico, Va.	11.9	Fairfield, Conn.	7.5	Essex, Mass.	5.1	% of U. S. A. Total	66.6
Kings, N. Y.	28.1	Bexar, Tex.	11.5	Albany, N. Y.	7.3	St. Louis, Minn.	5.0		
Jackson, Miss.	25.5	Bronx, N. Y.	10.9	Montgomery, Ohio	7.3	Tulsa, Okla.	5.0		
Essex, N. J.	25.4	Middlesex, Mass.	10.9	Kent, Mich.	7.1	Caddo, La.	4.9		
King, Wash.	24.4	Providence, R. I.	10.6	San Diego, Cal.	7.1	Dauphin, Pa.	4.8		
Milwaukee, Wis.	23.8	Oklahoma, Okla.	10.4	Maricopa, Ariz.	7.1	Ector, Tex.	4.7		
Hamilton, Ohio	23.4	Hartford, Conn.	10.3	Worcester, Mass.	6.8	Canawha, W. Va.	4.6		
Queens, N. Y.	21.6	Duval, Fla.	10.3	Sacramento, Cal.	6.7	Guildford, N. C.	4.6		

Finance, Insurance & Real Estate, Leading Counties

SM Estimates for 100 counties with 65% of 1956 Employment

COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti-mates (in thousands)
New York, N. Y.	284.9	Hamilton, Ohio	16.0	Shelby, Tenn.	7.4	Bergen, N. J.	4.4	Camden, N. J.	3.8
Cook, Ill.	118.4	Marion, Ind.	14.3	Bexar, Tex.	7.4	Union, N. J.	4.4	Bristol, Mass.	3.0
Los Angeles, Cal.	91.2	Franklin, Ohio	13.1	Hampden, Mass.	7.0	Lucas, Ohio	4.4	McLean, Ill.	3.0
Philadelphia, Pa.	84.1	Orleans, La.	12.1	Salt Lake, Utah	8.9	Norfolk, Va.	4.3	Hillsborough, Fla.	3.0
Suffolk, Mass.	46.8	Dade, Fla.	11.8	Middlesex, Mass.	6.9	Essex, Mass.	4.3	Hinds, Miss.	2.9
San Francisco, Cal.	40.6	Erie, N. Y.	11.7	New Haven, Conn.	6.8	Montgomery, Ohio	4.1	Mercer, N. J.	2.8
Wayne, Mich.	37.5	Denver, Colo.	11.3	Tarrant, Tex.	6.7	Hamilton, Tenn.	4.0	Sangamon, Ill.	2.9
Essex, N. J.	34.1	Multnomah, Ore.	11.1	Oklahoma, Okla.	6.4	Spokane, Wash.	4.0	Mobile, Ala.	2.9
St. Louis, Mo.	28.1	Douglas, Neb.	10.6	Monroe, N. Y.	6.2	Guilford, N. C.	3.8	Fresno, Cal.	2.9
Cuyahoga, Ohio	26.1	Alameda, Cal.	10.3	Onondaga, N. Y.	6.1	Santa Clara, Cal.	3.9	Lancaster, Pa.	2.9
Baltimore, Md.	24.8	Jefferson, Ala.	10.2	Worcester, Mass.	5.8	Sedgwick, Kan.	3.8	Cumberland, Me.	2.9
Washington, D. C.	24.8	Providence, R. I.	9.7	Bronx, N. Y.	5.7	Montgomery, Pa.	3.7	Pierce, Wash.	2.8
Allegheny, Pa.	24.1	Henrico, Va.	9.7	Davidson, Tenn.	5.6	Summit, Ohio	3.8		
Dallas, Tex.	23.3	Polk, Iowa	9.5	Mecklenberg, N. C.	5.5	Kent, Mich.	3.6	Total Above Counties	1,484.7
Hartford, Conn.	22.2	Jefferson, Ky.	8.8	Maricopa, Ariz.	5.1	Norfolk, Mass.	3.4	% of U. S. A. Total	64.5
Fulton, Ga.	20.4	Ramsey, Minn.	8.8	Fairfield, Conn.	5.0	Bernallio, N. M.	3.3		
Jackson, Miss.	19.5	Westchester, N. Y.	8.7	Tulsa, Okla.	5.0	Alien, Ind.	3.3		
King, Wash.	18.1	Queens, N. Y.	8.5	New Castle, Del.	5.0	San Mateo, Cal.	3.2		
Kings, N. Y.	17.4	Duval, Fla.	8.0	Dauphin, Pa.	4.9	Delaware, Pa.	3.2		
Hennepin, Minn.	17.1	Nassau, N. Y.	7.8	Albany, N. Y.	4.6	Arlington, Va.	3.2		
Harris, Tex.	17.0	San Diego, Cal.	7.6	Pasco, N. J.	4.5	Orange, Cal.	3.1		
Milwaukee, Wis.	16.8	Hudson, N. J.	7.5	Sacramento, Cal.	4.5	Berks, Pa.	3.1		

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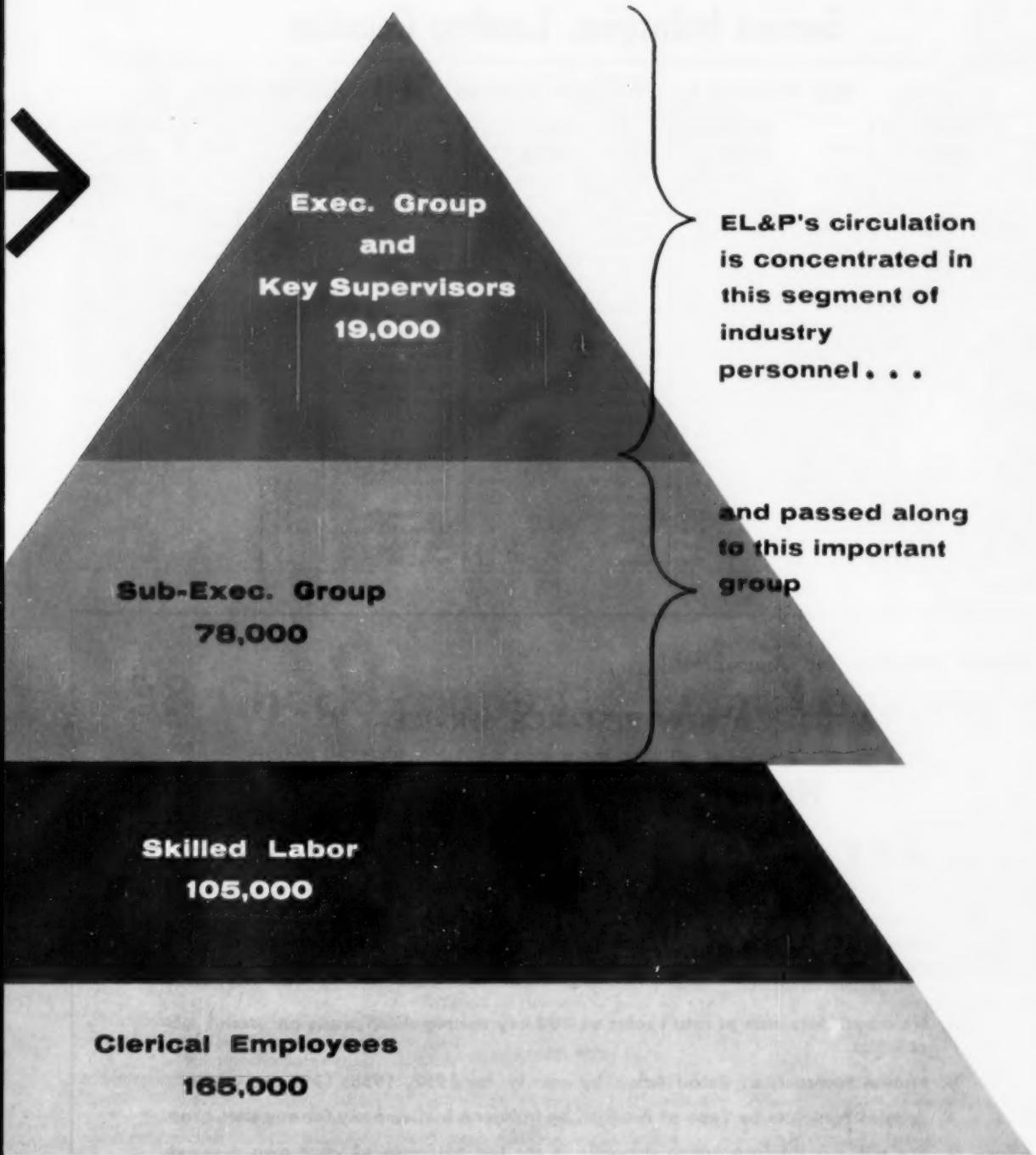
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Service Industries, Leading Counties

SM Estimates for 100 Counties with 64% of 1956 Employment

COUNTY and STATE	EMPLOYMENT SM Esti- mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti- mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti- mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti- mates (in thousands)	COUNTY and STATE	EMPLOYMENT SM Esti- mates (in thousands)
New York, N. Y.	279.8	Alameda, Cal.	25.1	New Haven, Conn.	12.8	Sacramento, Cal.	9.2	Oakland, Mich.	8.8
Los Angeles, Cal.	237.6	Hennepin, Minn.	24.7	Henrico, Va.	12.8	Worcester, Mass.	9.1	Mercer, N. J.	8.8
Cook, Ill.	179.8	Nassau, N. Y.	23.3	Tarrant, Tex.	12.3	Summit, Ohio	9.1	Delaware, Pa.	8.7
Wayne, Mich.	82.8	Montgomery, Ohio	12.1	Hudson, N. J.	12.1	Orange, Cal.	9.1	Broward, Fla.	8.7
Philadelphia, Pa.	70.0	Fulton, Ga.	21.2	Monroe, N. Y.	11.8	Polk, Iowa	8.9	Berks, Pa.	8.6
District of Columbia, D. C.	66.4	Bronx, N. Y.	21.2	Maricopa, Ariz.	11.8	Onondaga, N. Y.	8.5	Suffolk, N. Y.	8.5
Kings, N. Y.	50.9	Denver, Colo.	20.8	Clark, Nev.	11.8	Hampden, Mass.	8.5	Riverside, Cal.	8.4
Suffolk, Mass.	50.0	Orleans, La.	20.6	Bernalillo, N. M.	11.3	Sedgwick, Kan.	8.4	Albany, N. Y.	8.3
San Francisco, Cal.	47.4	San Diego, Cal.	20.3	Douglas, Nebr.	11.2	Tulsa, Okla.	8.2	Hamilton, Tenn.	8.3
Allegheny, Pa.	46.9	Middlesex Mass.	18.3	Duval, Fla.	11.1	Spokane, Wash.	8.2	Total Above Counties.	2,413.7
St. Louis, Mo.	44.3	Westchester, N. Y.	17.8	Davidson, Tenn.	11.0	Montgomery, Pa.	8.0	% of U. S. A. Total	83.5
Guyahoga, Ohio	43.6	Marion, Ind.	17.6	Lucas, Ohio	10.9	New Castle, Del.	7.9		
Dade, Fla.	36.8	Multnomah, Ore.	17.5	Salt Lake, Utah	10.8	Passaic, N. J.	7.9		
Baltimore, Md.	33.2	Franklin, Ohio	16.7	San Bernardino, Cal.	10.5	Dauphin, Pa.	7.8		
Essex, N. J.	30.6	Shelby, Tenn.	15.9	Santa Clara, Cal.	10.4	Pinellas, Fla.	7.8		
Harris, Tex.	30.5	Bexar, Tex.	14.8	Ramsey, Minn.	10.4	Hillborough, Fla.	7.5		
King, Wash.	29.2	Hartford, Conn.	14.3	Rockland, N. Y.	10.1	Mecklenberg, N. C.	7.5		
Dallas, Tex.	27.7	Jefferson, Ky.	13.9	Oklahoma, Okla.	9.8	San Mateo, Cal.	7.5		
Jackson, Mo.	27.0	Union, N. J.	13.3	Essex, Mass.	9.7	Fresno, Cal.	7.4		
Beaver, Pa.	27.0	Providence, R. I.	13.3	Norfolk, Va.	9.6	Palm Beach, Fla.	7.1		
Queens, N. Y.	26.8	Fairfield, Conn.	12.9	Atlantic, N. J.	9.5	Camden, N. J.	6.9		
Hamilton, Ohio	26.5	Jefferson, Ala.	12.6	Bergen, N. J.	9.4	Kent, Mich.	6.8		
						Pulaski, Ark.	6.8		

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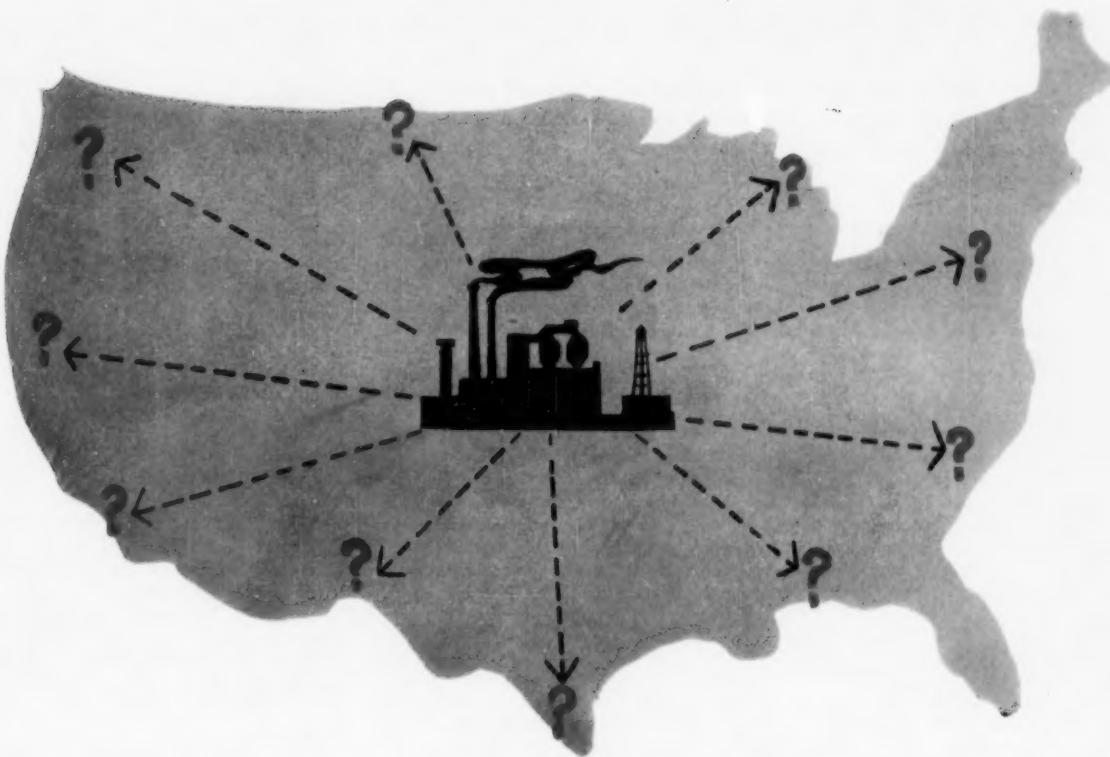
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38 Check-Points for Plant Locating

Picking the right site for a new plant calls for a combined study of much factual data and almost countless intangibles. You may elicit more informative answers by asking the questions below.

By **RAEBURN F. HAY**

*Vice President, Division of
Relocation Studies
Todd & Draper Corp.,
New York and Boston*

Plant-locating will never lend itself to answers from an electronic brain. While part of the answers come from an assortment of factual data—such elements as center-of-market, labor force potential, wage levels, tax rates, transportation costs and the like—yet how can a machine evaluate the true meaning of a Dave Beck in the community or the lack of adequate recreational centers?

Troublesome indeed are questions which management is more and more prone to ask about such things as the moral climate of a community, the quality of education offered in its schools, the cultural opportunities and the recreational facilities.

Is a community morally sub-standard if you can easily place a bet on the second at Jamaica? Or is bingo in

the local churches a sign of depravity? To some, the flourishing of a wide-open red light district would not seem gravely reprehensible. Top educators are at odds as to what constitutes a "good" education. One man's culture is another man's boredom; one man's recreation is another's pain in the neck.

SCREEN NO. 1

Any search for a location, be it a plant, office, warehouse, laboratory or research center, must start with facts and figures. Management will know broadly the general area where the new facility should be located. Depending on the industry, this area will be roughly delineated by virtue of answers to any one or more of the following basic questions:

1. Are present sales in the region sufficient to support the proposed facility?
2. Where customer service is important, are there enough customers to make a service facility desirable?
3. Can transportation costs (and time-in-transit) be reduced by locating the

proposed facility closer to the market?

4. Can labor costs be reduced by moving to an area of lower wage rates?
 5. Is there available a source of raw materials best processed close to the point of origin?
 6. For some industries, is low-cost energy, in the form of electric power, water power, natural gas, coal, etc., available?
 7. For some industries, are large quantities of water available having the right characteristics for the particular purposes intended?
 8. Is there available a large labor pool or a large pool of specific skills?
 9. Are there available supporting facilities such as outside contracting concerns, university or private research laboratories, etc?
 10. Is there available large acreage at low cost if isolation is desired because of the nature of the process, special hazards or security considerations?
- The above list is by no means exhaustive and not all factors are equally important to all industries. It will be noted, however, that they have one

These are secondary factors in your investigation of prospective plant sites, but in the experienced opinion of the author, you by-pass them "at your peril."



1. The police department: What is its record of arrests and convictions? Are policemen under Civil Service and adequately paid? How does the department handle juvenile delinquency? What kind of crimes have been committed over the preceding two or three years and what is their incidence?



2. The fire department: Are firemen paid full time, part time or are they volunteers? What type of equipment do they have and is it both adequate and reasonably modern? Are fire stations so located that equipment has quick access to any part of the community? Have they an adequate alarm system? Are hydrants sufficient in number and is both the water supply and pressure sufficient to cope with a major fire?



3. The clergy: Priest, minister or rabbi, each can tell a story well worth listening to. Here you are most apt to hear the truth about the moral climate of the community, the incidence of divorce (broken homes make unstable employees), juvenile delinquency, prostitution, organized gambling, racial or religious tensions and what the community thinks and does about these problems. Maybe they will shed a different light on the issues of a local strike, one which differs from that of the plant manager and suggests that, maybe, labor was not entirely at fault.



4. The public health facilities: You probably don't want your plant manager to have to drive his wife twenty five miles through the night when the stork calls. It is as well to look over hospitals, clinics and laboratories. They can supply information on the kinds of disease most prevalent in the area.



5. Union: A call at the local labor temple can be most rewarding. One may gain some insight into the attitude of labor leaders towards management and their responsibilities to the community.



6. Housing: Is housing adequate to the needs of the population and are plans laid for orderly growth? Are residential areas protected from the encroachment of sub-standard developments? Are the cost of purchase and rentals within the means of transferred or prospective employees?



7. Recreation: This should be viewed from the standpoint of transferred employees preferences and from that of general community welfare. Are the facilities adequate, well maintained and varied? Not everybody likes golf. And let us not forget television reception. A good picture in the living room and program variety is now a necessary part of the American way of life.

thing in common: they all are concerned with conditions in an area *as they now are*. Yet each and every one of these factors may change—and most probably will—in the future. A market may have grown to the point where a new facility to serve it would be "nice to have," but companies don't invest large sums of money unless they can be reasonably sure that the investment will pay out. A concentration of customers in a given area today is not enough. Today's large labor pool can gradually ebb away.

SCREEN NO. 2

It is at this point that a thorough analysis of the area's statistics really pays off. It will reveal, among other things, the following vital facts:

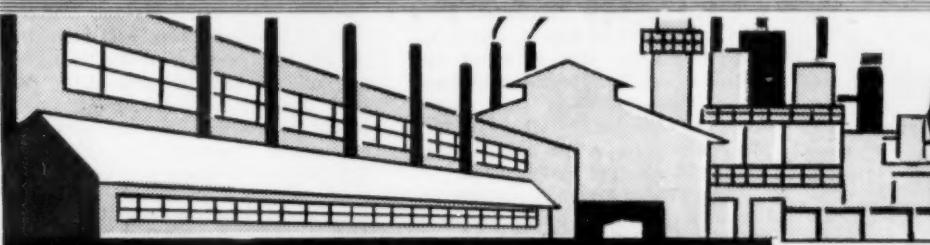
1. Is the population growing or declining and at what rate? People are important both in terms of the labor force and as customers.
2. What is the composition of the population as to age, sex, race, etc?
3. What are the occupations of the population and what is its income? Is it stable? Are there many unemployed or under-employed?
4. What are the educational standards and the skill levels of the area?
5. What are the buying habits of the population?
6. What are the thrift habits of the people?
7. What are the economic activities of the area? Agricultural? What crops? Industrial? What industries? Recreational? Tourist? Seasonal?

All this information, and much more, is readily available. But is it always reliable and always up-to-date? The answer to the last two questions must be "NO" if reliance is placed exclusively on state and Federal statistics. No one can reasonably question the reliability of the United States Census. But data gathered in 1950 is of questionable usefulness in 1957 except as a base for projections. And statistical projections are not for the amateur!

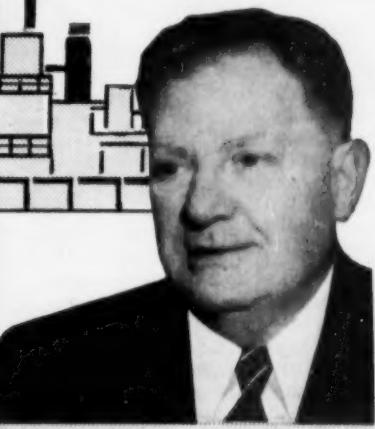
This preliminary statistical analysis will serve to eliminate from further consideration areas which clearly don't qualify on one or more major counts, e.g. population, income, industrialization and so forth. It will also point up areas that appear to be particularly promising.

The next step is to evaluate the suitability of the promising areas, as defined by the statistical analysis.

Generally speaking, the areas which pass through the wide-mesh screen of basic company criteria and the somewhat finer mesh of the statistical analysis still offer a variety of locational choices which have to be sifted before the optimum location can be pin-



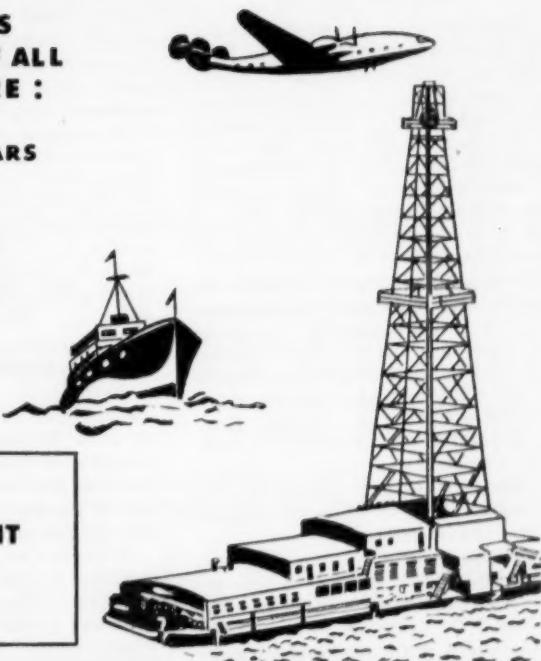
RECORD YEAR - 1956
\$ 563,000,000
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EARL K. LONG, GOVERNOR

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RAIL AND AIR TERMINALS
RAW MATERIALS



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Governor

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"Suitable plant sites available throughout
the State. The Department of Commerce
and Industry is prepared to provide the
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pointed. Let there be no mistake about it—the most costly and time-consuming part of plant location studies is the elimination of the duds, not the selection of the best.

Our statistical analysis has pointed up those areas which best fulfill the physical and strictly economic criteria which management has determined to be pertinent to the selection. No company official in his right mind would even consider an area or community which failed to pass this screen. Certainly, the consultant closely familiar with location problems regards such an analysis as an essential second step, the first being to help management arrive at meaningful location criteria. In this regard, SALES MANAGEMENT, because of its wide coverage, its statistical excellence and its up-to-dateness, is an invaluable tool, both to management and to the consultant.

SCREEN NO. 3

How does one evaluate the suitability of the promising areas? For those bent on a hazardous do-it-yourself program, without benefit of experience or a trained staff, a good beginning is to set their requirements forth to the Industrial Development Departments of such utilities and railroads as serve the preferred areas. Ninety-nine times out of a hundred, these agencies can be trusted to treat the inquiry in confidence and to make reasonably objective and intelligent recommendations as to which spots in their service area are most suitable. State agencies can also be most helpful, particularly if much information about the state's natural resources is required. However, political considerations occasionally hamper state agencies by making it difficult for them to pinpoint specific locations for fear of being charged with "favoritism."

In due course, management will have in its hands a pile of recommendations from the various agencies, together with brochures, pictures, maps and sundry other promotional material. Sifting through such a pile can be a bewildering experience. Here are a slew of communities and there is not a darn thing wrong—it says here—with a one of them! They all have a sober, industrious, God-fearing, patriotic labor force. They are all in the "heart of this" or at the "gateway to that." If you draw a circle of 1,000-miles radius around any of them, it will encompass umpteen million Americans and nine tenths of "the richest market in the World."

SCREEN NO. 4

Out of this morass, however, diligence may reveal that some have higher tax rates than others, that one

has three railroads as against others that have only one, and so forth. This data can be easily tabulated, given time and patience and a knack for converting cubic feet of water into gallons if you want to compare water costs. This tabulation will narrow down the choice still further—in fact, just about as far as it is possible to go without on-the-spot investigation.

Just what community factors are tabulated and how much weight is assigned to each factor depends, of course, on the nature of the facility to be located. Often, the tabulation will provide data that are not readily comparable. (Tax information is particularly tricky in this regard.) If communities are close together, each may allot unto itself half the population of the other in order to make a showing with a large labor pool. Professionals in the business try to achieve comparability of community data by devising more or less complex questionnaires which force communities to provide information on a standardized basis. Our own, for example, despite every effort to condense it, runs to eighteen pages. Even it has limitations. It is designed for the small- to medium-sized community and is ill adapted to the large city or an area such as a county. Most managements attempting a one-shot location study would not find it worth their while to develop their own questionnaire. Some of the larger companies, however, have done so.

SCREEN NO. 5

At this point, it can be assumed that the residual number of communities or areas has been brought down to manageable proportions. That is to say, they are few enough to undertake a field trip and give each one a going over by one or more investigators.

A number of problems arise at this juncture for the do-it-yourself management. Whom to send? A \$30,000-a-year vice president? A \$15,000-a-year plant manager? An \$8,000-a-year personnel manager? Or, perhaps a sales manager or an engineer. Who has the time and how much is his time worth and how much is riding on the man's evaluation?

Management wants neither the communities nor the trade to know prematurely of its plans. The higher the rank of the emissary, the more certain he is to be identified. The more people involved, the more certain is discovery. A letter on company stationary, license plates on a car, a car rental contract, a credit card—each and every one of these can tip off a community anxious to identify the investigator. Not to mention an inadvertent indiscretion at the bar of the local hotel!

Assuming that a choice of investigative personnel has been made and that "security" arrangements are considered satisfactory, how best organize the actual trip? We find that railroads and utilities and, in some states, the state agency, can all provide competent escorts and, in most instances, automobile transportation. Given information as to where you want to go, they will make all the necessary arrangements and reservations. Where desirable or necessary, they will introduce the investigator to local chambers of commerce or industrial development groups. Often their knowledge of the territory will provide many insights into the local economy and *mores* or, perhaps, the lowdown on local employers' policies and labor conditions.

How thorough each local investigation will be depends, of course, on the nature of the project. Aside from a visual inspection of the community and its surroundings (a grand tour which it is almost impossible to avoid in any event, even if one should desire to!), the following bases must be touched in any investigation:

1. **All local employers** of any substance for their opinions and impressions about the labor market, wages, municipal services, taxes, housing, schools, etc.

2. **The state employment office.** Their records are not always too useful but officials will often provide off-the-record information that is most illuminating.

3. **The local assessor** to determine what the assessment practice really is, since tax rates and published ratios of assessment to true value rarely reflect an accurate picture.

4. **The city or county clerk or treasurer** to study the community's fiscal history. From this can be determined the measure of fiscal responsibility of the local government.

5. **The local superintendent of schools** to study the school budget, the adequacy of facilities, teacher salaries, teacher work loads, record of dropouts and appropriateness of the curriculum in terms of the kind instruction that will be of benefit to the prospective employer.

6. A close inspection of **all buildings and/or sites** offered by the community as "available" for the use intended. And make sure they really are available. Too often, when one gets down to cases, Joe Jones, the owner, won't sell, or won't sell at a reasonable price or can't sell because an estate is in litigation. Or occupancy of the site for the intended purposes will give rise to a nasty re-zoning fight.

7. Interviews with **local utility and railroad officials** to determine the availability and cost of service and the

feasibility of serving the sites or buildings under consideration.

The investigator has now reached the point at which he can go home and assemble all his facts and impressions. He can project the measurable costs that would be incurred at the various locations and determine which one pans out lowest.

The management that automatically plunks for the lowest cost may, however, be in for a rude awakening. To what avail is such a location if you cannot get critically scarce technical and managerial personnel to live in the place? We know of one large company that lost three highly skilled electronics engineers sent to a small town as plant managers in one year. They—or their wives—simply would not suffer the place.

To what avail are low costs if a declining population is steadily eroding the labor force on which the operation has to count in years to come? There are many such areas in the United States.

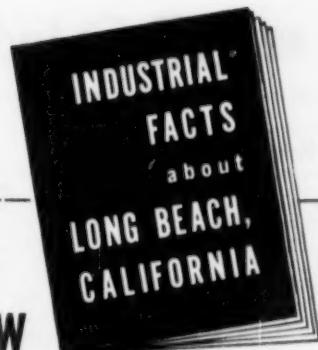
At the other end of the spectrum are areas which are today essentially "low cost" but they are on the threshold of a boom. Boom towns are bad medicine for most industries. They portend soaring taxes, local real estate inflation, overcrowded schools, jerry-built developments and trailer camps, honky-tonks and all the rest of the unsavory trappings of a "Gold Rush." Some of our large Atomic Energy installations have proven this point all too well.

The time for decision is at hand. Just which community gets the nod will depend almost entirely on the weighting which management gives to the many factors involved, both tangible and intangible. One town we know of, which was in almost every respect well ahead of the other contenders, lost out because the company concerned flew a DC-3 rather than a lighter plane. The local airport could not accommodate the larger plane! In this instance, accessibility of the plant to officials of the home office was the deciding factor. There are hundreds of airports throughout the country that can't accommodate a DC-3 or can only accommodate it during daylight hours or under favorable weather conditions.

Lest it be thought that this decision was of small moment, please note that the measurable operating costs at the location finally selected were estimated to be at least \$200,000 a year higher. It is our opinion that management, in this instance, made an unwise decision. \$200,000 is a lot to spend on executive convenience, particularly in view of the fact that a first-class airport was only forty-eight miles away, a short hour's drive.

(Continued on page 160)

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NEW ENGLAND STATES

CONNECTICUT

SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment)-NUMBER OF PLANTS, 1954 Census

COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment)-NUMBER OF PLANTS, 1954 Census																			
	Food	To-bacco	Tex-tile Mill	Ap-pliance	Lum-bar (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-stru-ments	Total
Fairfield	Plants 110	4	70	134	37	36	26	131	54	4	20	23	33	67	174	262	76	45	46	1,479
	Employment 34	58	2	5	16	46	32	1	31	14	19	78	84	206	137	116	50	50	1,076	
Hartford	Plants 180	4	14	82	32	46	27	117	27	2	8	7	22	38	203	257	47	41	19	1,168
	Employment 37	44	19	4	7	19	37	14	..	..	..	8	27	174	363	87	89	37	1,318
Litchfield	Plants 29	10	4	22	8	2	17	7	1	..	..	9	9	49	61	17	1	5	286
	Employment 2	14	2	3	..	..	..	..	..	..	..	8	23	20	43	22	..	18	191
Middlesex	Plants 18	14	16	16	7	5	16	10	1	4	2	9	2	30	27	7	15	2	227	
	Employment 1	14	5	1	2	4	5	..	..	..	7	..	1	15	10	3	4	1	104
New Haven	Plants 162	12	22	154	31	46	28	136	30	4	20	2	44	68	266	206	49	27	26	1,458
	Employment 42	1	15	86	3	8	25	42	30	1	80	..	11	149	125	116	88	87	51	1,130
New London	Plants 42	42	27	16	8	16	7	..	..	3	12	8	8	28	17	8	12	3	287
	Employment 5	63	10	1	1	19	8	14	..	..	..	8	5	18	16	2	1	2	170
Tolland	Plants 12	21	..	6	2	1	4	4	..	..	..	1	..	2	12	3	2	1	77
	Employment 1	30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	41
Windham	Plants 17	31	8	10	1	4	12	2	..	..	2	..	5	2	7	9	7	2	128
	Employment 2	69	2	..	..	3	..	..	..	..	1	..	1	11	2	22	7	3	130
Total Above Counties	Plants 569	20	224	385	170	164	110	459	149	12	85	46	131	194	763	861	212	143	97	5,090
	Employment 125	2	300	173	16	28	86	140	98	3	131	24	46	205	448	748	337	985	161	4,157

MAINE

Androscoggin	Plants 48	14	8	74	8	9	12	3	..	3	41	8	4	8	7	..	..	1	247
	Employment 4	61	6	4	1	3	3	..	..	..	74	2	2	1	..	..	..	..	167
Aroostook	Plants 36	..	2	139	..	2	8	9	..	..	..	1	..	..	..	..	..	..	203
	Employment 10	..	..	22	..	8	..	1	..	..	..	..	..	..	..	..	..	..	44
Cumberland	Plants 84	7	17	114	14	9	43	6	2	2	16	10	2	16	10	2	13	2	368
	Employment 32	6	4	12	4	34	7	1	..	..	16	..	..	16	4	..	..	..	154
Franklin	Plants 9	2	1	134	..	3	4	..	..	..	3	1	..	..	..	..	..	..	160
	Employment 6	..	..	18	..	7	..	..	..	..	3	..	..	..	..	..	..	..	37
Hancock	Plants 20	1	91	..	2	5	..	..	..	..	1	4	..	1	..	..	..	..	137
	Employment 3	..	6	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	21
Kennebec	Plants 36	9	4	81	1	10	8	1	..	..	8	..	2	6	4	..	..	..	178
	Employment 8	29	7	9	..	30	2	..	..	..	19	..	1	..	..	..	..	..	109
Knox	Plants 25	4	7	42	..	5	3	..	..	..	1	4	..	3	3	1	13	..	112
	Employment 6	4	2	2	..	..	1	..	..	..	4	..	..	1	..	..	..	..	26
Oxford	Plants 11	1	..	227	2	4	6	1	..	..	8	2	..	4	..	..	..	..	82
	Employment 1	2	..	31	1	30	..	..	..	..	12	..	..	..	..	..	..	..	..
Penobscot	Plants 42	12	4	243	4	10	17	2	..	1	14	8	8	2	3	4	..	..	373
	Employment 6	14	..	27	..	43	3	..	..	..	20	1	..	7	..	..	..	..	130
Piscataquis	Plants 2	3	2	126	1	..	3	..	..	..	..	..	..	..	..	..	..	..	138
	Employment 4	..	..	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21
Segaudahoc	Plants 7	2	2	17	..	2	2	2	..	..	1	1	..	1	..	..	..	..	39
	Employment 2	1	1	..	..	3	..	..	..	..	..	..	..	..	3	25	..	..	40
Somerset	Plants 13	7	..	165	..	4	4	1	..	..	..	..	..	1	..	..	..	..	229
	Employment 1	11	..	31	..	8	..	..	..	..	..	..	..	..	..	..	..	..	79
Washington	Plants 41	2	2	117	..	2	3	4	..	..	..	..	..	..	..	..	..	..	179
	Employment 8	1	3	10	..	6	..	..	..	..	..	..	..	..	..	..	..	..	32
York	Plants 20	7	3	127	4	4	10	2	..	..	14	1	1	4	8	1	..	..	225
	Employment 1	43	1	11	..	1	1	..	..	..	20	..	..	3	22	1	..	..	124
Total Above Counties	Plants 384	71	60	1,717	34	81	130	34	2	8	112	35	14	44	44	8	80	4	2,844
	Employment 89	187	28	204	8	184	23	8	1	203	10	3	25	37	8	39	..	..	1,072

MASSACHUSETTS

Berkshire	Plants 49	1	16	7	33	2	19	23	3	1	1	6	11	2	11	16	8	1	219	
	Employment 4	53	2	2	..	..	29	4	1	..	..	5	2	5	..	8	117	..	284
Bristol	Plants 158	1	126	188	38	24	56	88	21	3	9	18	17	27	95	81	10	18	8	1,073
	Employment 29	188	174	3	8	16	14	10	..	..	44	16	1	19	26	35	51	4	783
Essex	Plants 171	3	42	70	84	38	27	91	78	2	16	396	18	16	80	140	50	32	8	1,383
	Employment 50	50	31	4	7	24	12	17	10	249	1	8	24	107	195	60	..	876
Franklin	Plants 18	2	3	34	3	8	8	2	..	..	2	4	2	12	10	1	2	1	131
	Employment 8	4	1	2	..	10	1	..	..	..	2	..	..	14	10	..	..	..	70
Hampden	Plants 123	4	31	51	27	26	86	106	28	3	6	8	28	30	81	130	22	10	4	840
	Employment 40	44	41	7	4	78	41	30	33	6	6	27	28	171	42	12	7	885
Hampshire	Plants 20	13	0	40	9	11	17	8	2	3	2	3	13	19	3	..	3	183
	Employment 2	28	4	2	3	8	3	3	..	..	1	7	..	4	3	2	..	3	97
Middlesex	Plants 288	99	130	68	82	73	180	135	10	29	90	54	38	213	262	93	23	48	2,049	
	Employment 126	124	56	11	24	81	51	59	13	103	114	16	29	81	93	202	74	64	1,347	

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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For rankings of top 100 counties in each industry, see tables starting on page 58

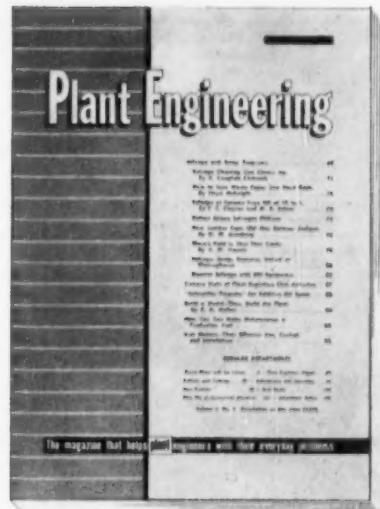
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- Pumps, Compressors, Prime Movers, Accessories
- Materials Handling
- Building Construction Materials and Equipment
- Building Maintenance Materials and Equipment
- Machinery Including Equipment for Installation, Repair, Maintenance
- Tools, Welding
- Paints and Protective Coatings
- Finishing Equipment and Systems (Plating, Painting, Degreasing)
- Fire Protection and Safety Equipment
- Sanitation Equipment and Supplies
- Water and Industrial Waste Treatment
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Industrial Potentials by Counties—(Cont'd)

MASSACHUSETTS (continued)

COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census																				
	Food	To-bacco	Tex-tile Mill	Ap-parel	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rub-bar	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc.)	Elec. Mach.	Trans. Equip.	In-struments	Total	
Norfolk	Plants	70	1	60	27	22	15	14	61	24	8	17	18	37	18	49	74	21	11	17	583
	Employment	17	...	47	8	5	1	15	16	7	6	32	20	6	3	14	42	37	43	28	360
Plymouth	Plants	82	...	14	40	40	9	10	43	17	2	6	107	14	11	28	35	19	16	4	497
	Employment	14	...	17	15	5	2	5	9	3	...	2	97	4	3	10	7	6	2	...	216
Suffolk	Plants	260	8	59	886	35	128	67	477	79	...	16	144	43	35	263	164	67	25	49	2,888
	Employment	182	2	24	200	4	19	23	173	15	...	11	87	10	11	65	60	60	24	30	1,019
Worcester	Plants	188	2	129	93	75	98	47	110	35	3	7	52	30	40	162	209	33	12	16	1,470
	Employment	37	...	118	52	11	64	51	33	7	1	6	67	62	88	88	209	30	13	41	1,060
Total Above Counties	Plants	1,426	21	571	1,281	483	440	367	1,184	424	29	110	844	258	231	957	1,147	324	144	181	11,116
	Employment	454	3	696	988	60	127	343	361	157	23	247	656	103	187	389	766	785	234	180	6,772

NEW HAMPSHIRE

Belknap	Plants	12	...	10	2	27	1	1	4	2	...	4	4	3	5	9	3	1	...	93	
	Employment	1	...	6	...	5	...	...	...	...	...	3	2	1	16	11	...	...	52	
Cheshire	Plants	11	...	14	...	60	7	9	6	3	...	6	1	1	6	17	...	2	1	182	
	Employment	1	...	16	...	11	2	3	2	...	...	8	...	5	6	...	...	1	62	
Coches	Plants	11	...	...	2	75	1	11	3	4	...	1	1	1	1	...	...	...	...	111
	Employment	11	...	...	1	9	1	33	...	2	...	3	...	...	...	...	...	...	...	53
Grafton	Plants	11	...	8	4	83	1	4	13	...	2	1	7	5	4	3	1	3	150		
	Employment	1	...	9	2	17	...	12	2	...	1	12	1	...	...	...	...	...	63	
Hillsborough	Plants	68	3	46	16	80	24	10	38	6	...	5	47	9	5	20	31	12	1	438	
	Employment	18	2	71	4	12	9	13	11	...	2	97	4	2	6	21	28	...	...	316
Merrimack	Plants	14	...	14	6	80	4	4	17	3	1	1	7	9	4	4	8	8	1	190	
	Employment	2	...	13	1	10	2	2	12	...	...	9	1	2	1	...	3	...	...	68
Rockingham	Plants	31	...	5	5	50	4	2	13	3	...	26	7	...	5	8	3	1	165		
	Employment	2	...	12	1	7	...	1	1	...	...	32	1	...	1	...	1	...	65	
Stratford	Plants	19	...	10	1	48	...	6	10	1	...	19	3	2	5	5	6	1	...	136	
	Employment	2	...	10	...	5	...	10	1	...	...	38	...	...	3	27	...	...	...	110
Sullivan	Plants	10	...	7	2	28	2	2	8	...	...	4	2	1	4	7	1	...	2	81
	Employment	3	...	5	...	2	...	2	1	...	...	6	...	1	13	...	...	...	37	
Total Above Counties	Plants	187	3	111	37	531	44	48	112	22	3	8	121	41	17	53	88	31	8	10	1,516
	Employment	31	2	146	12	82	17	88	33	5	...	14	208	12	7	18	82	73	...	3	829

RODE ISLAND

Bristol	Plants	14	...	8	9	1	...	1	4	1	...	4	1	2	5	6	...	...	80	
	Employment	1	...	15	3	...	...	...	...	...	...	12	...	11	...	1	...	...	51	
Kent	Plants	16	...	70	10	1	2	2	12	8	1	3	1	2	34	28	2	2	2	201
	Employment	1	...	41	10	...	...	1	1	1	2	2	2	1	4	5	4	1	...	81
Providence	Plants	211	1	275	53	26	33	30	129	51	4	12	10	35	63	274	190	20	11	22,248
	Employment	54	...	260	27	3	8	17	33	10	3	41	3	19	51	66	114	32	8	22,1057
Washington	Plants	14	...	28	3	1	1	...	5	1	...	1	7	...	1	4	1	4	1	77
	Employment	2	...	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39
Total Above Counties	Plants	255	1	381	75	29	36	42	150	61	4	18	23	43	67	309	227	23	23	2,585
	Employment	80	...	350	41	3	6	17	36	12	3	56	7	20	63	71	121	37	9	22,1,229

VERMONT

Bennington	Plants	5	...	4	6	28	7	2	7	1	...	1	3	1	2	3	2	...	...	79
	Employment	1	...	1	3	3	4	1	3	...	...	1	1	1	2	7	...	...	34	
Chittenden	Plants	37	...	2	7	22	4	1	11	3	1	1	1	8	1	4	8	2	2	114
	Employment	6	...	9	4	3	2	...	2	...	...	...	...	1	2	...	...	...	...	49
Rutland	Plants	25	...	8	42	1	1	12	2	...	4	25	2	4	4	1	1	0	1	138
	Employment	1	...	9	5	...	2	...	2	...	...	14	15	...	1	0	...	...	1	47
Washington	Plants	19	...	4	1	34	...	9	...	1	...	1	93	1	2	0	...	...	...	174
	Employment	2	...	2	3	...	1	1	1	...	...	20	...	...	...	...	...	...	...	32
Windham	Plants	11	...	1	1	60	5	8	10	2	...	2	3	2	4	5	2	...	...	129
	Employment	2	...	4	6	1	2	4	...	2	...	2	4	...	...	...	...	...	...	33
Windsor	Plants	7	...	8	1	54	1	8	...	2	...	3	2	3	13	...	1	1	104	
	Employment	2	...	9	7	1	1	...	7	...	...	3	...	3	60	...	...	...	...	82
Total Above Counties	Plants	104	...	19	24	240	18	12	87	8	1	4	7	138	9	19	37	9	3	738
	Employment	15	27	16	30	7	3	14	1	7	4	41	5	4	63	8	1	1	279	

MIDDLE EAST STATES

Kent	Plants	28	3	5	13	...	4	3	1	1	1	5	...	2	2	...	1	...	69
	Employment	15	1	6	8	5	11	34	21	4	3	11	15	7	23	36	2	5	31
New Castle	Plants	84	1	12	15	8	5	11	34	21	4	3	11	15	7	23	36	2	295
	Employment	20	28	7	1	...	8	11	40	1	6	20	4	33	22	26	37	...	294

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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SM SIC Industrial Potentials by Counties—(Cont'd)

DELAWARE (continued)	COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census																			
		Food	Tobacco	Textile Mill	Apparel	Lumber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chemical	Petr. and Coal	Rubber	Leather	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	Instruments	Total
Sussex.....	Plants	53	..	15	14	43	2	..	11	13	..	..	..	8	..	3	3	1	2	1	192
	Employment	27	..	2	8	7	..	..	..	31	..	..	1	..	..	..	..	..	3	3	84
Total Above Counties.....	Plants	142	1	30	34	84	7	11	49	37	5	4	12	28	7	26	41	5	7	4	556
	Employment	63	..	32	21	9	..	8	12	71	1	7	23	5	33	23	32	1	37	3	410

DISTRICT OF COLUMBIA

District of Columbia.....	Plants	81	..	10	11	14	10	248	13	1	1	..	12	..	23	10	10	1	10	484
	Employment	67	..	..	1	1	2	8	109	2	..	..	2	..	7	1	3	..	2	206
Total Above Counties.....	Plants	81	..	10	11	14	10	248	13	1	1	..	12	..	23	10	10	1	10	484
	Employment	67	..	..	1	1	2	5	109	2	..	..	2	..	7	1	3	..	2	206

MARYLAND

Allegany.....	Plants	28	3	3	17	2	2	6	2	..	1	..	12	2	4	2	..	1	89		
	Employment	8	..	4	1	..	..	35	2	33	..	23	8	..	..	..	..	117	..	
Anne Arundel.....	Plants	7	..	4	13	2	..	8	7	..	..	..	6	..	4	5	1	22	..	
	Employment	4	..	..	2	..	..	1	4	..	..	..	..	..	..	..	..	5	..	
Baltimore.....	Plants	294	1	22	294	78	88	61	250	130	13	11	18	58	38	180	141	31	33	18,1,826	
	Employment	233	..	26	187	16	36	63	93	93	29	10	14	56	360	147	78	112	370	11,1,967	
Caroline.....	Plants	27	..	4	4	..	1	6	1	..	..	..	1	..	..	..	..	..	2	..
	Employment	12	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20
Carroll.....	Plants	23	..	1	11	13	3	2	7	3	..	1	3	4	..	1	6	..	2	..	
	Employment	6	..	..	17	..	..	3	..	..	..	7	3	4	..	..	2	..	..	47
Cecil.....	Plants	7	..	2	3	12	..	2	4	7	..	1	4	1	..	2	..	6	1	64	
	Employment	1	..	2	1	..	..	2	..	..	..	4	..	..	..	..	1	..	2	..
Dorchester.....	Plants	39	..	7	21	..	..	5	2	..	..	..	2	..	2	1	1	6	..	
	Employment	17	..	..	8	4	..	..	..	..	..	..	..	..	..	..	..	..	..	39
Frederick.....	Plants	34	1	1	7	9	1	..	7	1	..	..	3	7	1	2	4	..	1	82
	Employment	6	..	1	16	1	..	..	1	..	..	..	2	1	1	1	10	..	51	..
Harford.....	Plants	12	1	2	14	..	..	10	5	..	1	..	2	..	8	1	1	1	..	60
	Employment	4	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	28
Montgomery.....	Plants	16	..	1	2	14	10	..	17	3	2	..	..	6	..	9	9	11	1	10,119
	Employment	4	..	..	1	..	..	..	3	..	..	..	..	3	2	6	1	3	31	..
Prince Georges.....	Plants	9	..	2	16	7	2	21	8	2	..	1	18	2	14	9	4	3	6	129	
	Employment	2	..	..	1	..	..	1	..	..	..	..	4	..	3	..	5	17	1	46
Washington.....	Plants	38	..	12	8	13	4	..	11	4	1	1	4	10	1	6	6	1	2	131	
	Employment	8	..	2	4	4	..	..	2	..	..	1	7	8	..	2	8	..	55	..
Wicomico.....	Plants	29	..	17	19	..	..	..	9	5	..	1	..	1	..	2	1	..	..	99
	Employment	28	..	..	16	5	..	..	1	1	..	..	..	1	..	..	5	..	1	..
Worcester.....	Plants	25	..	1	3	24	..	..	1	4	1	..	..	..	..	..	..	..	..	60
	Employment	18	..	1	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25
Total Above Counties.....	Plants	587	2	44	387	265	117	81	385	179	18	17	28	138	45	229	183	54	83	30	2,961
	Employment	353	1	38	231	46	46	104	112	143	32	68	28	83	362	167	101	138	490	17	2,670

NEW JERSEY

Atlantic.....	Plants	57	..	12	87	18	11	..	30	4	..	1	2	19	..	7	8	4	10	3	282
	Employment	10	..	1	29	1	..	..	2	..	..	..	..	6	..	..	1	..	..	..	57
Bergen.....	Plants	113	1	88	279	33	83	38	145	101	3	8	17	39	24	154	201	60	15	38	1,499
	Employment	24	..	67	88	4	7	42	25	44	8	2	11	11	27	38	38	46	239	104	828
Burlington.....	Plants	25	..	25	24	19	5	5	14	11	1	2	5	7	9	19	42	9	9	3	244
	Employment	1	..	26	19	2	..	..	2	3	..	..	2	1	7	8	10	3	2	..	188
Camden.....	Plants	68	1	24	43	13	6	11	55	25	2	4	8	26	9	86	66	16	8	7	507
	Employment	78	6	4	17	1	1	16	11	15	2	5	8	8	8	28	13	143	79	1	462
Cumberland.....	Plants	65	..	11	42	12	..	3	21	14	..	1	..	46	8	8	18	..	9	2	257
	Employment	24	..	12	41	4	..	..	5	2	..	..	..	81	2	..	5	..	7	..	190
Essex.....	Plants	215	1	78	311	51	96	71	285	207	13	19	79	43	82	382	326	171	30	53	2,817
	Employment	202	2	35	94	9	11	38	50	113	4	7	35	7	47	102	143	275	66	30	1,431
Gloucester.....	Plants	27	..	12	31	8	7	1	10	8	4	..	1	9	5	15	12	4	3	..	184
	Employment	4	..	20	1	1	..	1	..	4	35	..	..	1	13	2	2	..	..	..	86
Hudson.....	Plants	180	1	134	985	31	61	62	98	186	13	11	34	36	43	153	141	63	23	20	2,363
	Employment	108	9	58	189	4	17	64	47	128	45	3	17	26	43	62	134	242	27	12	1,330
Hunterdon.....	Plants	19	..	4	5	7	2	2	7	10	..	1	2	6	3	4	5	2	1	..	35
	Employment	2	..	1	1	..	..	8	1	1	..	..	2	1	3	5	1	..	..	..	..
Mercer.....	Plants	75	2	15	26	12	11	9	50	15	..	14	6	47	12	50	52	18	8	1	443
	Employment	13	0	22	11	1	3	7	8	18	..	43	8	58	18	82	45	32	9	2	404
Middlesex.....	Plants	67	3	12	141	16	16	21	38	68	9	7	16	41	25	58	47	17	13	10	651
	Employment	13	0	8	73	7	8	20	23	143	14	7	10	32	74	19	30	61	25	56	655
Monmouth.....	Plants	60	..	6	96	14	10	3	36	12	2	3	2	21	7	32	27	24	20	7	406
	Employment	8	..	17	81	1	1	..	4	2	..	1	..	6	..	5	6	33	12	..	170
Morris.....	Plants	29	..	13	20	16	8	8	27	21	3	7	4	21	8	28	64	31	7	12	382
	Employment	9	..	8	14	3	1	12	3	22	..	16	5	6	9	10	25	20	6	..	186

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

NEW JERSEY (continued)	COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census																			
		Food	To-bacco	Tex-tile Mill	Ap-parel	Lum-bar (exc. furn.)	Furn. & Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-struments	Total
Passaic	Plants	103	8	312	235	32	38	40	102	78	2	14	13	34	24	116	106	42	10	11	1,487
	Employment	34	—	181	97	3	7	17	24	46	—	54	5	11	22	41	44	72	11	17	723
Salem	Plants	13	—	1	8	2	—	—	7	4	—	—	—	8	—	2	1	1	1	—	49
	Employment	6	—	1	4	—	—	—	—	90	—	—	—	14	—	—	—	—	—	—	109
Somerset	Plants	30	—	4	20	8	4	4	13	10	4	1	—	16	5	15	18	9	2	2	166
	Employment	1	—	3	35	—	—	—	2	1	42	4	7	—	35	3	3	8	41	—	193
Sussex	Plants	12	—	3	11	8	2	1	9	4	—	2	1	6	1	3	4	2	—	6	74
	Employment	1	—	3	5	—	—	—	—	1	—	—	1	—	2	—	—	3	—	1	28
Union	Plants	73	—	15	100	33	38	27	78	84	12	4	12	23	40	148	218	84	17	12	1,088
	Employment	33	—	12	51	3	20	16	25	117	87	1	6	7	41	71	157	89	81	9	811
Warren	Plants	20	—	18	12	5	1	8	7	4	1	—	—	6	9	4	10	10	8	—	118
	Employment	—	—	8	6	—	—	16	2	11	—	—	—	1	14	9	37	7	—	—	118
Total Above Counties	Plants	1,220	13	781	2,446	329	380	312	1,032	838	99	99	206	484	309	1,289	1,426	840	183	187	12,991
	Employment	579	35	473	833	52	88	281	244	798	172	154	113	320	303	820	707	1,047	559	244	7,986

NEW YORK

Albany	Plants	63	—	23	31	8	12	17	62	17	2	1	—	17	9	23	21	4	8	2	336	
	Employment	36	—	22	20	1	1	18	32	4	—	—	—	30	34	9	8	3	8	2	244	
Allegany	Plants	20	—	1	4	12	1	—	11	3	2	1	—	4	1	9	6	3	—	—	80	
	Employment	1	—	1	—	—	—	—	—	—	—	—	—	1	3	9	10	—	—	—	36	
Bronx	Plants	210	15	66	572	43	140	45	104	88	2	4	37	89	10	264	92	88	28	38	2,078	
	Employment	73	—	11	125	5	19	18	27	17	1	1	17	11	1	65	24	22	8	12	824	
Broome	Plants	55	1	4	14	13	4	8	30	6	—	4	44	13	4	21	39	7	1	8	209	
	Employment	16	—	2	7	2	8	9	11	2	—	18	137	1	8	7	106	7	20	42	431	
Cattaraugus	Plants	42	—	2	1	17	7	—	17	3	1	—	1	4	3	19	11	3	—	—	139	
	Employment	6	—	6	12	—	—	1	3	3	3	—	3	4	—	10	21	12	—	—	90	
Cayuga	Plants	42	—	4	7	8	2	1	17	5	1	—	8	2	7	7	10	4	—	—	134	
	Employment	9	—	16	1	—	—	—	1	—	—	—	10	3	1	15	12	—	—	88	—	
Chautauqua	Plants	61	—	6	11	38	42	3	23	6	2	1	—	11	8	42	41	8	4	1	326	
	Employment	18	—	12	10	8	52	—	6	1	—	2	26	80	47	3	10	—	—	262	—	
Chemung	Plants	31	—	3	2	6	1	4	15	3	1	—	8	3	11	13	2	4	2	109	—	
	Employment	6	—	1	—	3	—	—	3	10	—	—	13	9	10	66	33	15	—	176	—	
Chenango	Plants	19	—	5	6	23	—	—	11	4	—	—	2	3	5	3	4	2	1	96	—	
	Employment	4	—	4	1	3	—	—	—	10	—	—	2	2	—	2	3	4	—	40	—	
Clinton	Plants	16	—	—	1	17	—	9	6	1	1	1	—	3	1	1	1	—	—	61	—	
	Employment	1	—	—	2	2	2	13	—	2	—	—	—	—	—	2	—	—	—	26	—	
Columbia	Plants	21	—	13	12	6	1	1	6	8	—	—	2	8	1	3	10	2	1	1	96	
	Employment	3	—	8	4	—	—	2	—	—	—	—	—	8	—	—	1	—	46	—		
Cortland	Plants	24	—	3	11	14	1	2	6	5	—	—	1	3	2	4	4	2	3	—	86	
	Employment	6	—	5	14	2	—	—	—	—	—	—	—	9	7	4	2	—	6	—	61	
Delaware	Plants	19	—	1	—	40	4	—	10	3	—	—	—	3	1	2	—	—	37	—	58	
	Employment	9	—	—	5	1	—	—	1	—	—	—	—	2	—	2	—	—	—	—	—	
Dutchess	Plants	39	1	12	44	8	8	8	28	7	2	3	3	12	2	7	29	6	4	2	232	
	Employment	6	3	10	22	1	2	8	20	—	—	6	6	2	1	1	131	8	—	236	—	
Erie	Plants	316	2	13	73	48	39	32	188	95	10	12	10	73	63	177	208	28	38	22	1,529	
	Employment	126	—	12	30	9	25	26	51	92	26	35	1	43	355	144	136	121	232	21	1,531	
Essex	Plants	14	—	4	1	45	1	4	7	1	1	—	—	2	—	—	2	—	1	—	84	
	Employment	—	—	—	4	—	13	—	—	—	—	—	—	—	—	—	—	—	—	21	—	
Fulton	Plants	15	—	14	43	14	—	4	8	2	—	—	188	3	1	8	1	—	1	—	273	
	Employment	13	—	9	1	—	—	2	1	—	—	—	98	—	1	2	—	—	—	—	91	
Gansevoort	Plants	24	—	3	2	1	1	3	8	3	3	—	1	4	1	6	10	1	1	—	80	
	Employment	6	—	1	—	—	—	3	1	1	—	—	3	14	9	3	10	11	1	—	74	
Greene	Plants	10	1	8	11	4	1	4	4	3	—	—	—	6	3	2	4	2	2	—	62	
	Employment	1	—	3	—	1	—	—	1	—	—	—	—	5	—	4	—	1	—	21	—	
Herkimer	Plants	25	—	5	8	24	6	7	10	2	1	1	12	4	1	7	10	1	1	—	128	
	Employment	4	—	7	5	8	6	2	—	—	—	—	10	1	2	49	—	3	—	112		
Jefferson	Plants	46	—	1	5	10	1	21	18	4	2	2	—	5	—	3	11	2	4	0	145	
	Employment	8	—	2	1	—	—	24	2	1	—	—	—	287	182	86	799	417	174	88	127	7,851
Kings	Plants	617	16	459	2,217	176	522	232	384	311	11	31	287	182	86	799	417	174	88	127	12,785	
	Employment	316	1	120	874	19	83	95	85	118	7	6	81	32	30	220	124	121	68	48	2,385	
Livingston	Plants	13	—	1	3	—	2	—	15	8	1	—	1	2	1	4	4	4	—	60	—	
	Employment	3	—	1	—	—	—	3	—	—	—	—	2	2	7	1	3	—	28	—		
Madison	Plants	12	—	—	9	5	4	4	8	4	—	—	4	1	4	8	1	1	4	67		
	Employment	2	—	—	1	3	1	—	—	—	—	—	—	1	—	1	—	1	—	22		
Monroe	Plants	195	—	6	39	25	31	35	136	36	3	3	17	30	24	90	160	27	8	50	979	
	Employment	88	9	95	3	14	17	48	8	—	—	—	8	8	9	37	88	134	52	448	1,138	
Montgomery	Plants	24	—	14	23	2	1	5	12	3	—	—	7	3	1	2	2	—	—	106		
	Employment	17	62	12	—	—	—	4	2	—	—	—	4	—	1	—	—	—	—	106		
Nassau	Plants	62	1	22	109	52	87	10	150	34	8	1	11	44	16	158	137	65	57	37	1,143	
	Employment	9	3	25	7	15	8	62	10	—	—	—	3	9	45	28	33	143	32	68	—	
New York	Plants	438	50	714	11,776	229	570	318	3,785	293	5	26	902	186	71	889	563	293	36	320	26,040	
	Employment	218	4	120	2,402	18	72	84	1,121	79	—	2	202	21	18	120	63	106	8	62	5,234	
Niagara	Plants	87	—	8	6	18	4	25	24	31	6	—	2	13	18	24	39	11	9	2	300	
	Employment	14	7	2	5	1	53	25	9	2	—	—	54	6	18	47	108	8	610	—		

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications



Industrial Potentials by Counties—(Cont'd)

NEW YORK (continued)	COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment)—NUMBER OF PLANTS, 1954 Census																				
		Food	To-bacco	Tex-tile-Mill	Ap-parel	Lum-bar (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-stru-ments	Total	
Oneida	Plants	110	2	13	23	24	10	8	43	13	2	—	3	13	15	31	31	10	5	2	375	
	Employment	22	—	27	11	3	4	6	8	5	—	—	1	2	60	45	33	45	31	1	360	
Onondaga	Plants	98	2	4	13	20	19	16	79	26	3	3	4	19	31	75	99	13	9	9	568	
	Employment	33	—	4	9	8	3	8	21	42	—	—	8	23	58	48	142	160	60	3	651	
Ontario	Plants	36	—	2	3	4	2	1	11	—	1	—	—	4	2	5	14	3	—	1	92	
	Employment	8	—	—	—	—	—	—	1	—	—	—	—	3	—	9	13	—	4	45		
Orange	Plants	55	—	15	80	7	9	10	29	11	3	2	26	9	7	23	21	8	2	3	341	
	Employment	6	—	33	40	—	4	5	5	5	—	—	18	8	1	7	6	5	—	—	157	
Orleans	Plants	23	—	—	1	2	4	1	6	—	—	—	1	1	4	2	3	—	1	2	52	
	Employment	12	—	—	—	1	—	—	—	—	—	—	—	3	—	—	—	—	—	—	22	
Oswego	Plants	29	—	4	4	22	3	17	14	2	1	—	—	3	3	12	13	—	—	—	131	
	Employment	15	—	1	2	1	1	41	2	—	—	2	15	1	2	8	3	—	—	—	84	
Queens	Plants	209	3	168	383	70	150	64	159	134	8	9	33	92	47	384	255	150	45	105	2,772	
	Employment	207	2	49	108	16	32	63	51	38	2	8	25	13	22	116	49	139	24	94	1,257	
Rensselaer	Plants	44	—	10	36	17	4	7	24	11	1	—	1	7	6	7	14	—	2	2	202	
	Employment	8	—	15	50	1	—	10	5	20	1	—	3	1	3	2	8	—	—	2	139	
Richmond	Plants	22	—	2	66	3	4	3	13	14	2	1	1	5	6	16	17	—	11	2	202	
	Employment	15	—	5	17	—	—	2	15	1	2	—	4	6	1	2	—	21	5	105		
Rockland	Plants	22	—	9	29	3	4	4	13	9	1	1	3	3	—	13	16	5	3	2	151	
	Employment	2	—	6	12	—	—	17	1	66	—	—	1	—	3	7	1	—	—	—	115	
St. Lawrence	Plants	54	—	5	22	2	11	10	3	1	—	1	4	4	3	3	1	—	—	—	127	
	Employment	6	—	3	4	3	—	16	2	—	—	1	—	3	—	3	1	—	—	—	101	
Saratoga	Plants	33	—	14	8	16	2	21	11	2	1	—	2	6	1	7	1	—	—	—	127	
	Employment	3	—	10	11	1	—	31	1	4	—	3	—	3	1	—	—	—	—	—	82	
Schenectady	Plants	42	2	1	4	4	1	19	6	—	—	—	12	2	7	12	10	4	1	137		
	Employment	8	—	1	—	—	—	13	7	—	—	10	4	—	—	121	166	35	—	414		
Seneca	Plants	7	—	2	1	3	—	—	5	1	—	—	—	—	6	2	2	—	—	—	34	
	Employment	2	—	3	—	1	—	—	2	—	—	—	—	—	11	12	—	—	—	—	35	
Steuben	Plants	40	—	8	3	14	3	1	16	2	1	—	7	1	7	8	3	2	—	115		
	Employment	11	—	3	1	3	4	2	1	—	—	79	—	—	30	12	3	—	—	155		
Suffolk	Plants	60	1	17	82	29	25	3	46	17	2	—	3	32	6	53	46	21	59	21	567	
	Employment	8	—	7	27	2	3	3	2	2	—	—	2	—	8	4	19	232	7	344		
Tompkins	Plants	16	—	1	2	5	—	—	21	4	1	—	2	4	—	2	11	—	—	—	70	
	Employment	1	—	1	—	—	—	3	1	—	—	1	—	—	38	—	—	—	—	—	50	
Ulster	Plants	34	1	6	58	36	7	7	16	3	1	—	2	14	2	14	19	5	8	1	240	
	Employment	4	—	3	26	4	2	5	2	8	—	—	3	—	3	61	16	—	1	97		
Warren	Plants	12	4	11	39	—	5	6	6	6	—	—	2	6	1	4	—	—	—	—	50	
	Employment	1	—	7	9	5	—	11	2	7	—	—	3	—	—	—	—	—	—	—	104	
Washington	Plants	14	—	2	11	21	2	15	8	1	2	—	15	—	2	6	1	1	—	—	49	
	Employment	1	—	4	7	1	2	—	17	—	—	1	—	1	3	7	—	—	—	—	111	
Wayne	Plants	84	—	3	11	2	3	14	7	1	—	1	2	4	1	7	1	—	—	—	61	
	Employment	18	—	7	—	1	—	5	1	1	—	1	—	20	—	2	1	—	—	—	437	
Westchester	Plants	97	—	26	226	23	53	17	184	71	5	3	9	9	26	16	123	86	88	19	39	1,208
	Employment	49	—	8	84	2	7	3	58	27	2	—	1	4	31	38	47	78	58	11	537	
Wyoming	Plants	17	—	8	2	7	1	1	6	1	—	—	4	—	4	—	0	2	—	1	64	
	Employment	3	—	8	1	1	—	—	1	—	—	—	3	4	1	—	—	—	—	—	29	
Total Above Counties	Plants	3,678	108	1,703	16,026	1,310	1,780	1,014	5,778	1,397	99	111	1,668	889	487	3,389	2,589	1,038	471	813	48,884	
	Employment	1,471	15	886	3,790	187	402	885	1,701	715	58	85	630	459	846	1,067	1,537	1,456	1,285	812	19,444	

PENNSYLVANIA

Adams	Plants	23	3	3	13	19	6	3	5	1	—	2	7	7	2	1	4	3	1	—	106
	Employment	8	1	1	7	3	5	2	—	—	1	16	2	1	—	1	2	—	—	—	56
Allegheny	Plants	270	4	2	88	33	63	26	281	88	17	3	8	115	100	231	193	36	17	28	1,880
	Employment	174	—	1	11	6	17	26	76	89	52	—	1	100	860	178	129	240	110	43	2,140
Armstrong	Plants	19	—	3	—	38	—	—	8	3	2	1	19	1	4	3	—	1	—	—	100
	Employment	15	—	—	1	—	—	—	1	1	—	—	51	—	—	—	—	—	—	—	76
Beaver	Plants	42	—	2	5	4	4	11	12	4	1	—	31	30	20	16	3	3	3	—	500
	Employment	7	—	—	1	5	2	—	13	13	—	21	318	69	13	28	1	—	—	—	500
Berks	Plants	122	4	181	82	24	12	23	42	23	2	—	13	14	38	43	56	11	10	3	660
	Employment	43	1	134	37	2	2	15	8	9	1	—	20	6	67	25	62	21	36	9	519
Blair	Plants	53	2	4	11	3	8	17	7	1	4	—	4	13	3	6	1	—	1	—	137
	Employment	11	—	7	5	1	—	19	5	—	—	14	11	6	2	13	—	—	—	—	101
Bradford	Plants	9	—	3	3	19	—	2	9	1	—	1	—	2	—	2	16	—	—	—	42
	Employment	1	—	5	2	—	—	2	1	6	—	—	2	—	2	5	1	—	—	—	42
Bucks	Plants	83	2	83	33	16	17	15	27	17	2	6	2	32	13	34	44	9	9	8	437
	Employment	4	21	30	2	1	21	4	30	8	5	—	11	79	17	10	8	26	24	313	
Butler	Plants	21	—	1	2	23	4	—	6	8	4	1	—	21	9	12	19	1	1	—	137
	Employment	2	—	3	1	1	—	1	5	6	3	—	10	30	2	5	1	16	—	104	
Cambria	Plants	45	1	13	38	10	2	17	4	4	—	14	5	7	8	2	5	—	—	180	
	Employment	12	—	28	2	2	—	3	—	7	—	—	5	180	8	2	—	10	—	248	
Carbon	Plants	18	—	20	27	9	3	—	7	4	—	2	5	8	1	1	1	1	—	108	
	Employment	2	—	8	27	—	—	1	1	—	—	3	28	—	4	—	—	—	—	80	

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Cross Index of 4-Digit Industry Data, pages 12, 16 and 20.

Industrial Potentials by Counties—(Cont'd)

PENNSYLVANIA (continued)		SM EMPLOYMENT, 1956, in hundreds. (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census																			
		Food	To-bacco	Tax-tile Mill	Ap-parel	Lum-bar (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-struments	Total	
Centre.....	Plants	17	1	2	3	24	12	1	1	..	11	3	..	4	2	..	3	87	
	Employment	2	5	2	5	2	1	13	10	..	1	1	46	
Chester.....	Plants	50	28	18	19	4	19	29	15	2	3	..	15	12	27	30	6	5	289		
	Employment	22	..	13	8	2	2	21	6	11	..	4	10	67	13	13	7	7	215		
Clarion.....	Plants	17	..	..	2	29	3	2	8	..	1	..	9	..	..	4	4	..	80
	Employment	1	..	..	..	1	1	..	1	..	..	1	12	..	..	..	..	..	20
Clearfield.....	Plants	24	3	11	61	..	1	9	1	..	..	1	2	18	1	1	3	3	146
	Employment	2	..	6	2	..	..	2	3	..	..	1	2	17	..	1	1	8	60
Clinton.....	Plants	17	..	2	2	12	1	4	5	5	1	..	4	1	3	3	1	1	63		
	Employment	1	..	5	..	1	..	14	1	3	..	..	1	1	2	1	9	16	61
Columbia.....	Plants	29	18	23	17	1	1	7	4	..	..	..	3	1	4	5	..	..	115
	Employment	11	28	21	1	..	..	1	2	..	..	2	..	..	..	2	..	..	97
Crawford.....	Plants	31	2	1	35	3	..	9	3	..	2	1	3	..	23	8	9	..	103		
	Employment	4	..	..	1	..	..	1	17	..	..	1	..	..	..	..	..	..	135
Cumberland.....	Plants	31	1	7	11	9	6	8	14	3	..	1	4	12	3	9	5	10	88		
	Employment	6	13	13	1	1	4	1	1	..	4	10	1	4	9	4	7	..	88		
Dauphin.....	Plants	88	1	2	30	12	8	3	38	12	4	..	9	11	8	12	18	3	273		
	Employment	51	1	2	34	3	2	..	14	..	3	..	20	2	83	10	8	12	17	270	
Delaware.....	Plants	40	..	21	17	21	9	11	49	23	3	4	3	19	16	46	10	14	8	303	
	Employment	12	42	14	4	1	24	18	28	66	1	1	3	28	60	18	142	2	409		
Elk.....	Plants	12	..	..	13	..	2	6	3	..	..	2	8	3	3	5	10	..	63
	Employment	1	..	..	3	..	3	..	1	..	..	1	1	1	1	49	..	..	72
Erie.....	Plants	71	1	8	28	16	9	41	7	3	3	2	8	28	52	89	13	9	422		
	Employment	21	..	3	3	13	20	10	1	3	13	1	1	42	36	78	26	79	18	404	
Fayette.....	Plants	37	1	1	6	47	2	..	12	7	17	1	16	4	8	7	..	1	172		
	Employment	4	..	2	9	6	..	..	2	3	1	..	21	..	12	2	..	2	72
Franklin.....	Plants	29	3	9	22	8	1	11	1	..	..	3	9	2	5	21	1	3	126
	Employment	4	3	26	1	1	..	1	..	..	..	2	..	1	43	..	7	..	94
Huntingdon.....	Plants	12	..	4	33	..	1	7	..	..	..	1	8	..	5	..	..	..	72
	Employment	1	..	10	2	..	3	1	..	..	..	13	..	..	..	..	..	..	33
Indiana.....	Plants	11	..	4	34	..	..	8	..	4	2	2	7	1	2	3	1	..	82
	Employment	1	..	3	2	..	..	1	..	1	2	2	..	..	6	..	..	..	39
Jefferson.....	Plants	17	..	1	8	33	1	..	9	3	1	..	8	3	6	8	3	1	99		
	Employment	2	..	4	1	..	..	1	..	..	..	23	..	1	13	..	..	..	51
Lackawanna.....	Plants	84	4	28	146	19	14	7	44	12	..	1	5	16	7	29	10	10	3	481	
	Employment	18	14	37	104	1	9	3	23	3	..	10	3	..	14	9	24	11	326		
Lancaster.....	Plants	141	13	37	57	24	16	11	47	17	3	2	21	28	31	60	68	11	7	612	
	Employment	33	10	72	47	3	2	4	17	4	..	29	18	15	48	49	53	6	15	444	
Lawrence.....	Plants	39	..	1	2	6	2	1	11	5	2	..	1	22	6	19	15	1	1	142	
	Employment	1	..	1	1	1	33	32	16	35	10	..	141	
Lebanon.....	Plants	48	1	12	37	11	2	5	13	7	..	1	8	8	11	6	11	..	182		
	Employment	12	..	11	36	..	..	4	2	4	..	..	9	5	37	2	2	..	133
Lehigh.....	Plants	86	4	72	102	12	21	4	36	16	2	3	5	33	8	33	37	11	2	479	
	Employment	23	7	33	102	2	4	1	6	7	..	7	15	4	28	28	80	23	2	370	
Luzerne.....	Plants	124	9	39	197	38	16	6	48	14	2	1	14	19	10	19	41	2	8	632	
	Employment	25	39	40	157	2	0	1	10	3	..	23	2	10	11	23	7	6	..	389	
Lycoming.....	Plants	45	15	17	44	16	4	20	6	1	1	9	9	5	15	14	6	2	236		
	Employment	5	20	26	8	14	6	6	1	10	1	16	7	13	23	29	..	194	
McKean.....	Plants	16	..	..	33	6	1	16	12	4	..	5	0	1	5	6	5	1	126
	Employment	1	..	..	6	5	1	2	2	7	..	1	14	4	17	6	..	74	
Mercer.....	Plants	37	..	8	20	..	1	11	3	..	..	11	16	14	12	4	2	1	145
	Employment	3	..	1	1	..	..	2	..	..	..	1	87	13	25	82	8	..	231
Mifflin.....	Plants	19	4	3	20	..	..	4	2	..	..	8	3	1	1	..	..	..	64
	Employment	2	2	7	1	..	..	..	..	..	..	2	23	..	4	..	..	..	71
Monroe.....	Plants	10	19	16	12	2	1	12	2	..	..	2	6	4	7	7	1	1	106
	Employment	3	3	4	..	..	..	1	6	1	..	1	1	6	2	..	..	..	42
Montgomery.....	Plants	99	98	70	23	24	17	61	81	4	8	9	55	30	88	114	28	14	15	831	
	Employment	25	86	48	3	8	23	11	16	4	81	2	44	78	81	81	50	14	12	624	
Montour.....	Plants	4	..	1	1	3	1	..	2	..	1	2	..	1	..	..	8	..	24
Northampton.....	Plants	87	29	129	8	6	11	36	8	3	..	3	46	7	24	17	9	1	2	410	
	Employment	13	28	101	1	1	16	12	5	4	..	6	40	258	20	12	12	547	
Northumberland.....	Plants	53	1	14	30	17	2	1	14	5	..	1	1	9	8	6	7	1	1	172	
	Employment	12	3	14	46	2	8	..	2	10	..	4	3	5	1	1	1	10	..	130	
Philadelphia.....	Plants	441	21	398	609	81	249	171	674	278	21	30	110	83	83	873	491	103	39	103	5,214
	Employment	347	44	277	403	14	54	93	299	177	70	28	83	34	61	281	236	229	92	96	2,974
Schuylkill.....	Plants	80	..	32	82	24	2	4	21	2	2	..	7	14	3	8	6	2	1	276	
	Employment	8	..	27	103	1	1	2	3	13	9	1	17	7	1	203	
Somerset.....	Plants	28	1	..	8	70	6	1	..	1	1	12	2	8	2	..	1	140	
	Employment	2	..	..	13	4	..	..	..	..	..	1	..	1	1	1	1	..	27
Tioga.....	Plants	19	..	..	3	13	1	..	6	1	..	2	1	1	2	2	..	1	45
	Employment	2	..	..	1	2	..	..	..	..	..	16	11	..	..	2	..	..	32
Venango.....	Plants	15	..	..	41	1	..	6	3	7	..	1	2	4	3	16	4	..	107
	Employment	2	..	..	1	..	..	4	..	12	..	..	3	7	2	46	..	..	63
Warren.....	Plants	11	..	..	1	29	5	..	7	3	8	..	4	2	8	11	6	5	96
	Employment	1	..	..	3	5	1	..	8	..	..	1	9	8	7	14	1	..	86

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

PENNSYLVANIA
(continued)

COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1964 Census																				
	Food	To- bacco	Tex- tile Mill	Ap- paratu-	Lum- ber (exc. turn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem- ical	Pet. and Coal	Rub- ber	Leath- er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments	Total	
Washington	Plants	48	—	—	1	13	3	4	15	6	—	2	—	26	9	14	17	4	—	1	165
	Employment	8	—	—	1	1	—	4	2	5	—	—	—	56	96	11	5	32	—	—	224
Wayne	Plants	10	—	8	7	26	2	1	3	1	—	—	3	1	—	1	6	1	—	81	
	Employment	1	—	—	1	10	1	1	—	—	—	—	4	—	—	—	—	—	—	—	23
Westmoreland	Plants	71	—	1	13	26	3	1	37	5	14	9	—	41	29	30	34	9	1	1	342
	Employment	10	—	—	1	7	2	—	11	2	2	10	—	48	173	46	67	26	—	12	429
York	Plants	122	56	33	58	38	43	21	53	13	7	2	14	26	18	32	60	7	4	2	624
	Employment	37	20	34	49	5	36	24	21	2	3	—	19	8	14	34	81	11	5	7	438
Total Above Counties	Plants	2,863	129	1,197	2,282	1,338	616	418	1,865	706	148	89	280	930	608	1,543	1,641	357	189	206	18,289
	Employment	1,039	153	960	1,662	146	223	387	633	409	277	135	308	702	2,778	1,065	1,234	1,065	717	269	14,656

WEST VIRGINIA

Berkeley	Plants	12	—	1	2	11	3	1	5	2	—	—	—	5	—	1	—	1	—	44	
	Employment	4	—	12	6	1	1	—	—	6	—	—	—	2	—	—	—	—	—	34	
Brooke	Plants	3	—	—	—	3	3	8	5	1	1	—	—	4	2	8	2	—	—	40	
	Employment	—	—	—	—	—	—	6	—	3	8	—	—	2	10	9	—	—	—	42	
Cabell	Plants	27	1	—	8	6	12	1	13	7	—	2	1	18	4	13	9	4	6	3	140
	Employment	7	1	—	12	3	6	—	3	9	—	1	1	22	32	3	2	20	8	2	144
Fayette	Plants	2	—	—	—	22	—	—	8	—	2	—	—	3	1	—	2	—	—	37	
	Employment	—	—	—	—	3	—	—	—	—	—	—	—	16	—	—	—	—	—	22	
Hancock	Plants	4	—	—	—	—	1	5	—	2	1	—	—	12	2	4	—	—	—	32	
	Employment	1	—	—	—	—	—	—	—	6	—	—	—	50	98	2	—	—	—	160	
Harrison	Plants	20	—	—	1	16	1	1	11	1	1	—	—	12	3	5	5	3	—	84	
	Employment	2	—	—	3	1	—	—	1	—	—	—	—	41	3	1	1	8	—	66	
Kanawha	Plants	40	—	4	24	5	—	—	32	17	5	—	1	15	3	8	14	3	1	3	182
	Employment	15	—	—	3	—	—	—	1	138	5	—	—	31	—	10	6	—	—	214	
Marion	Plants	11	—	—	9	—	1	6	1	2	—	—	8	2	1	8	1	1	1	52	
	Employment	1	—	—	—	—	1	1	—	1	—	—	—	18	4	—	4	9	—	43	
Marshall	Plants	6	1	—	2	6	—	1	3	3	—	—	1	3	2	2	2	1	—	34	
	Employment	—	—	—	1	—	—	—	—	7	—	—	—	8	23	2	—	3	—	59	
Monongalia	Plants	10	—	—	4	14	—	—	4	1	2	—	—	19	—	4	2	—	—	60	
	Employment	2	—	—	2	1	—	—	1	8	1	—	—	8	—	10	—	—	—	35	
Ohio	Plants	36	4	1	4	3	1	2	12	6	—	—	1	8	6	8	13	—	2	110	
	Employment	7	6	3	—	—	—	—	3	2	—	—	—	4	15	31	6	—	—	81	
Putnam	Plants	—	—	—	1	3	—	—	1	7	—	—	—	1	—	2	—	—	—	18	
	Employment	—	—	—	5	—	—	—	—	19	—	—	—	—	—	—	—	—	—	25	
Wood	Plants	20	—	—	2	13	3	2	10	4	1	—	—	9	1	8	8	1	1	81	
	Employment	5	—	—	1	—	—	—	1	2	26	—	—	20	1	11	7	1	—	79	
Total Above Counties	Plants	191	6	2	28	130	26	18	112	49	16	3	4	114	26	81	68	14	9	9	911
	Employment	49	8	15	33	15	8	11	17	220	23	1	1	207	205	84	29	49	8	2	1,006

SOUTHEAST STATES

ALABAMA

Butler	Plants	2	—	1	3	28	—	2	—	—	—	—	1	—	—	—	—	—	—	37	
	Employment	—	8	8	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23	
Calhoun	Plants	19	—	11	5	28	1	6	3	—	—	—	4	12	4	5	1	1	1	106	
	Employment	3	—	36	7	2	—	—	3	—	—	—	37	4	4	4	24	—	—	129	
Chambers	Plants	6	9	1	23	1	—	2	—	—	—	—	1	—	—	—	—	—	—	43	
	Employment	1	80	2	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	87	
Clarke	Plants	2	—	1	1	84	4	2	—	—	—	—	1	—	—	1	—	—	—	76	
	Employment	—	7	8	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26	
Colbert	Plants	8	—	1	1	9	2	—	3	2	—	2	3	3	3	7	—	—	—	43	
	Employment	—	—	20	21	4	—	1	—	2	—	—	—	—	—	—	—	—	—	60	
Covington	Plants	11	2	6	26	1	1	4	—	4	—	1	1	3	—	—	—	—	—	50	
	Employment	—	6	32	1	1	4	2	1	—	—	—	—	4	1	3	1	—	—	71	
Dallas	Plants	12	1	—	1	13	—	1	—	6	2	1	—	—	—	—	—	—	—	32	
	Employment	6	6	—	1	—	—	—	—	5	—	—	—	—	—	—	—	—	—	59	
Escambia	Plants	9	—	2	2	33	—	3	1	—	—	—	—	8	1	—	3	—	—	22	
	Employment	3	4	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	134	
Etowah	Plants	19	2	1	20	2	—	7	2	3	1	—	10	9	10	4	—	—	—	93	
	Employment	3	30	—	1	—	—	1	—	2	32	—	1	82	3	6	—	—	—	134	
Houston	Plants	24	1	1	3	25	4	—	8	5	—	—	—	8	1	2	1	—	1	86	
	Employment	8	1	1	7	6	—	—	—	2	—	—	—	1	—	—	—	—	—	32	
Jefferson	Plants	97	—	1	19	66	31	4	73	37	10	3	—	48	45	90	46	9	12	6	606
	Employment	48	11	13	16	8	2	22	17	22	—	—	—	33	261	62	20	4	83	631	
Lauderdale	Plants	7	2	—	7	1	—	3	1	—	2	—	4	—	3	1	—	—	—	31	
	Employment	2	14	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	21	
Lee	Plants	10	3	2	28	1	—	8	2	—	—	—	2	1	1	1	1	—	—	55	
	Employment	2	24	8	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	40	
Madison	Plants	16	—	2	7	7	3	—	7	5	—	—	1	2	1	3	4	1	—	60	
	Employment	3	31	—	—	—	—	—	1	—	—	—	1	—	2	—	—	—	—	124	

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

ALABAMA (continued) COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census															Total				
	Food	To-bacco	Tex-tile Mill	Ap- parel	Lumber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem- ical	Petr. and Coal	Rubber	Leath- er	Ston. Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments	
Mobile..... Plants	47	8	53	5	16	29	15	2	10	1	9	8	1	20	1	226
Mobile..... Employment	29	..	..	1	17	..	88	5	20	5	..	..	8	2	2	2	36	..	184
Montgomery..... Plants	32	..	1	5	70	10	1	19	19	3	1	1	9	1	10	4	2	1	182	
Montgomery..... Employment	14	..	4	3	15	3	..	5	9	..	..	..	5	2	1	3	..	1	89
Morgan..... Plants	12	..	3	..	19	..	..	4	5	1	..	..	4	1	5	6	..	1	64
Morgan..... Employment	4	..	18	..	5	..	..	..	4	..	..	..	1	2	4	3	..	1	43
Talladega..... Plants	11	..	10	4	31	1	2	8	8	..	..	..	8	4	2	3	..	..	88
Talladega..... Employment	1	..	42	4	8	..	..	8	20	..	..	..	8	11	..	..	..	..	97
Tallapoosa..... Plants	7	..	9	2	42	..	..	3	1	..	..	..	2	..	..	..	..	..	70
Tallapoosa..... Employment	1	..	30	1	4	..	..	..	..	..	..	..	9	..	..	..	..	..	67
Tuscaloosa..... Plants	17	..	2	2	57	2	4	7	8	6	1	..	4	1	3	1	..	..	117
Tuscaloosa..... Employment	5	..	..	..	20	..	16	1	4	2	12	..	14	..	..	..	..	..	82
Walker..... Plants	10	..	1	2	38	6	..	3	..	1	1	..	2	..	1	..	..	..	67
Walker..... Employment	..	..	8	7	3	..	..	..	..	..	..	..	2	..	..	..	..	..	21
Total Above Counties..... Plants	378	2	64	80	704	76	29	106	117	27	12	3	132	84	144	87	13	38	9	2,245
Total Above Counties..... Employment	125	7	389	99	149	15	94	42	88	33	53	1	61	423	97	44	29	122	..	1,082

ARKANSAS

Ashley..... Plants	3	..	..	..	34	..	4	2	1	..	..	..	1	..	1	..	..	..	..	46
Ashley..... Employment	..	..	..	..	16	..	9	..	3	..	..	..	..	..	..	..	..	..	..	30
Bradley..... Plants	2	..	..	..	22	..	..	2	1	..	..	..	..	..	..	1	..	..	..	28
Bradley..... Employment	..	..	..	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21
Hot Spring..... Plants	2	..	1	2	29	..	..	2	..	1	..	..	3	3	2	1	..	..	..	47
Hot Spring..... Employment	..	..	..	2	4	..	..	..	..	..	..	..	4	15	..	..	..	..	..	29
Jefferson..... Plants	17	..	1	1	30	8	1	4	5	..	..	..	2	3	2	1	1	..	..	78
Jefferson..... Employment	4	..	3	..	8	..	1	1	3	..	..	..	5	..	..	3	..	..	..	37
Ouachita..... Plants	9	..	..	..	51	1	6	4	..	2	..	..	5	1	1	..	..	..	..	81
Ouachita..... Employment	2	..	..	..	10	1	20	1	..	3	..	..	..	..	..	..	..	..	..	50
Phillips..... Plants	6	..	1	1	13	1	..	3	2	..	..	..	..	..	..	1	..	..	..	29
Phillips..... Employment	1	..	..	7	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21
Pulaski..... Plants	70	..	2	10	35	20	4	34	13	3	3	1	14	1	18	8	2	5	2	262
Pulaski..... Employment	20	..	1	16	16	7	1	10	10	..	..	..	8	..	6	1	14	1	..	119
Searcy..... Plants	3	..	..	..	26	3	..	1	2	..	..	..	2	..	..	..	..	..	..	37
Searcy..... Employment	..	..	..	..	2	12	..	..	22	..	..	..	..	..	..	..	..	..	..	37
Sebastian..... Plants	43	..	4	9	23	3	14	1	2	1	..	..	9	1	8	6	2	1	136	
Sebastian..... Employment	11	..	2	2	25	4	4	1	..	..	..	..	8	3	3	..	..	..	..	88
Union..... Plants	10	..	..	..	37	1	1	8	4	7	..	..	2	1	2	3	..	..	..	78
Union..... Employment	1	..	..	..	13	..	..	..	9	17	..	..	..	..	..	..	..	..	..	48
Washington..... Plants	35	..	1	2	11	..	..	7	3	..	..	..	3	..	1	..	..	..	..	83
Washington..... Employment	15	..	1	1	2	..	..	..	..	..	..	..	21	26	11	1	17	1	..	21
Total Above Counties..... Plants	290	..	6	20	297	54	10	81	32	15	4	1	41	10	37	18	3	8	3	882
Total Above Counties..... Employment	59	..	9	28	108	47	37	10	51	21	..	..	21	26	11	1	17	1	..	482

FLORIDA

Bay..... Plants	9	..	..	..	2	11	2	3	6	1	..	..	2	..	1	1	..	..	..	41
Bay..... Employment	1	..	..	..	3	1	..	17	..	..	..	..	..	..	..	..	..	..	..	25
Broward..... Plants	18	..	2	12	11	18	..	27	7	4	1	..	26	3	24	14	3	9	..	191
Broward..... Employment	3	..	..	1	3	2	..	4	..	1	..	..	5	3	1	3	5	..	35	
Dade..... Plants	143	3	11	187	68	142	16	161	44	8	5	18	88	9	147	31	26	39	8	1,236
Dade..... Employment	48	..	..	43	6	34	8	30	6	..	..	8	15	2	41	5	4	11	3	274

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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DAYTONA BEACH
FLORIDA
METROPOLITAN AREA
will attract and hold technicians



SM SIC Industrial Potentials by Counties—(Cont'd)

FLORIDA (continued)	COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census																		Total		
		Food	To-bacco	Tex-tile Mill	Ap- parel	Lum- ber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem- ical	Petr. and Coal	Rub- ber	Leather	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments		
Duval	Plants	83	2	2	6	69	32	12	53	30	3	3	1	20	8	40	19	6	18	1	423	
	Employment	33	1		3	11	5	20	14	13				10	3	8	6	1	32	1	167	
Escambia	Plants	26			2	16	6	7	10	8				7		1	2		1	1	90	
	Employment	8				7		29	2	47											96	
Hillsborough	Plants	99	38	2	13	37	31	9	66	33	2	2		22	7	29	18	8	15	1	458	
	Employment	49	53		6	6	5	7	9	15				3		17	1	1	9		190	
Orange	Plants	26	1	1	5	19	18			30	18	1	2	1	22	3	16	13	4	8	8	210
	Employment	21						2		8	1											50
Palm Beach	Plants	27			3	17	10		22	13				1	17	1	12	7	3	8	1	150
	Employment	8					2	2		3	1				1		1					21
Pasco	Plants	2				16			2	1					4		1	1				27
	Employment	18				4																22
Pinellas	Plants	37	1	3	10	15	29	2	40	11	1	1	2	27	3	38	19	2	18	8	295	
	Employment	6	2					2		8	2				4		3	2		1		38
Polk	Plants	47	3		2	26	3	2	16	21				2	11	1	8	8		1	1	181
	Employment	50	1			3			2	11					3		3	8				81
Putnam	Plants	7				36	2	3	8						3							57
	Employment					4	2	17														25
Total Above Counties	Plants	529	48	21	242	341	293	54	438	187	17	14	23	248	36	312	130	51	120	23	3,331	
	Employment	239	58	2	59	52	57	97	82	99	2	1	6	47	7	87	26	11	61	8	1,029	

GEORGIA

Barrow	Plants	2		1	12	6	3		1										2		27
	Employment			2	22	1	1														27
Bartow	Plants	8		4	4	13			2	2				4	1		1				37
	Employment																				26
Bibb	Plants	35		13	6	31	8	7	14	11	1	3		12	1	5	5	5	1		158
	Employment	18		30	6	15	2	16	3	5				8		4					114
Carroll	Plants	8		23	4	21	8		4	1				2	2	1					73
	Employment	1		13	14	2								1		4					39
Chatham	Plants	33		4	40	6	10	19	22	7				10		13	2	1	8	1	179
	Employment	21			19		57	3	11	5				3		2			11		138
Chattooga	Plants	1		7		9	1		1												20
	Employment			41		1															43
Cherokee	Plants	5		2		31	1		2					2			2				48
	Employment	3		14		4															23
Clarkes	Plants	18		10	9	8	2	1	4	3	1			2	1	2	7				71
	Employment	11		9	9	2									1		1				38
Cobb	Plants	11		8	3	11	9	1	6	2	1	1		7		8	7		1		77
	Employment	1		17	5	2	6		1					1		1			186		224
Coweta	Plants	8		8	3	21			3	1				4	1	1	4				49
	Employment	1		27	6	3										4	3				49
De Kalb	Plants	22		4	2	18	15	2	16	12	1			2	12	1	14	14	1	4	146
	Employment	8		8		2	1	1	1	1				3	2	3	8		26		68
Dougherty	Plants	19		4	1	18	2	1	7	10				1	4		1	4			71
	Employment	7		10		4			1	8				1				1			32
Floyd	Plants	19		8	7	17	2	3	8	4				5	3	8	4	2	4		94
	Employment	6		67	8	3	3	1		24				1	4	1	1	9			136
Fulton	Plants	130		15	85	74	42	23	158	80	2	4	7	31	12	82	88	18	13	8	866
	Employment	99	56	74	19	31	28	46	24				1	7	22	17	29	10	33		530
Glynn	Plants	9	1		1	30	2	1	3	2				2		3	7				65
	Employment	14				3		6		9				1		3					41
Gordon	Plants	3		10	14	8			1												40
	Employment			12	6																22
Gwinnett	Plants	4		2	4	28	1	1	2	1				8		11					23
	Employment	4		1	1	2															23
Habersham	Plants	2		3	4	38	3		2					1	3						57
	Employment			5	8	2	4														29
Hall	Plants	25		6		24	3		8	3				2	4	1					76
	Employment	20		33		1	1		1					8		1					66
Haralson	Plants	1		1	5	7	2		2												30
	Employment			6	22	1															18
Jackson	Plants	4		3	2	8		1	1	1											25
	Employment	1		13	8	1															41
Laurens	Plants	10		1	1	10	1		3	2					2		2				20
	Employment	1		8	3	8															74
Lewndes	Plants	12		1	3	34	2	2	4	8				5	1	2	2				28
	Employment	1		3	3	7			5												28
Muscogee	Plants	19		14	6	27	7	2	16	7				5	1	7	13	1			124
	Employment	25		112	8	4	1		5	1							1	10			108
Newton	Plants	2		4	3	12			1	2					2	1	2				29
	Employment			26	2	1															32
Polk	Plants	7		7	8		3	2	3					4	1	1	1				38
	Employment			28		2	1		1					3		1					39

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

GEORGIA (continued)	COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment.—NUMBER OF PLANTS, 1954 Census)																	
		Food	To-bacco	Tex-tile Mill	Ap-parel	Lum-bar (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leather	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-stru-ments	Total
Richmond	Plants	27	9	3	24	5	1	17	13	1				7	2	8	7	1	126
	Employment	15	35	1	5		5	3	3					14		2			88
Spaulding	Plants	13	10	3	6	2	1	4	4					2			1		48
	Employment	4	59	2	2														70
Stephens	Plants	5	2	2	9	10		1	3					1	1	2	1		38
	Employment		11	6	4	6													34
Thomas	Plants	20	1	3	20	2		3	3			1		3		1	3		62
	Employment	9	3	2	7														28
Troup	Plants	13	11	31	2			3	1			1	2	2	2	1			69
	Employment	1	88	3										1					97
Upson	Plants	5	4	16				1	1					1					28
	Employment		46	3															60
Walker	Plants	8	11	1	20	2		2								1	1		45
	Employment	1	54	1															59
Walton	Plants	5	3	4	6	1		1	2					1					23
	Employment	1	14	4	1														23
Ware	Plants	10	1	2	23	2	2	3	2				1	8	1				55
	Employment	1	8		3								4		1				22
Whitfield	Plants	9	48	43	19	4		2	3			4	1	6	5	7			183
	Employment	2	43	40	2			1											93
Total Above Counties	Plants	531	2	288	244	728	146	82	320	200	13	16	24	180	33	158	181	29	3,188
	Employment	292	9	929	268	153	64	128	77	96	6	3	29	53	38	47	64	21	2,578

KENTUCKY

Boyd	Plants	16			2	6	2		8		2	1	2	4	3	4	1	1	62	
	Employment	1			1						11		1	2	37				58	
Campbell	Plants	12	1	4	1	3		6	1					7	2	7	6	1	55	
	Employment	8		7		2		1						24	1		6	62		
Daviss	Plants	18	2		13	5		7	2			1	6	3	6	5	2	1	73	
	Employment	11			2	4		1				2	7	1	1	58		91		
Fayette	Plants	31	8	2	2			22	3				7		7	5	3	2	104	
	Employment	10	7	2	1			5				2		1	1	3	4	41		
Franklin	Plants	9	1	1	2			3			1	2	1		1	1	1	24		
	Employment	10		4								4						21		
Graves	Plants	15		3	1	1		2	1				8		1			32		
	Employment	2		25									1					31		
Henderson	Plants	7	1	1	2	7	1	2	5				1	2	1	1		44		
	Employment		5	1		5		3										22		
Jefferson	Plants	139	13	8	19	48	49	16	109	55	2	3	3	33	10	67	70	14	609	
	Employment	131	83	8	16	38	32	6	51	70	3			13	14	124	228	8	42	
Kenton	Plants	20	1	1	3	3	2	5	5	5	2	1		3	4	17	14	4	99	
	Employment	5		1				3						1	7	4	8		37	
McCracken	Plants	22	3	1	3	4	3		8	1			2	6	1	1	2	4	60	
	Employment	4	5	4	1			1	17				8		1	3	4		50	
Warren	Plants	16	3		1	5	5		4				1		2	4			42	
	Employment	4	1		9											9			26	
Total Above Counties	Plants	305	31	13	40	90	79	22	170	73	7	8	10	74	23	114	108	29	10	1,284
	Employment	188	93	19	74	42	47	9	64	93	15		12	23	84	130	248	83	83	7,1,320

LOUISIANA

Caddo	Plants	52			4	25	7	1	20	12	5			9	6	15	14	3	2	187
	Employment	15			4	9	1		6	4	7			9	2	12	2	1	77	
Calcasieu	Plants	26			1	28	6		10	10	4			5	1	3	2		101	
	Employment	10				5			1	23	38			1					84	
East Baton Rouge	Plants	38	1	3	18	3		22		14	4			9	3	15	7	2	142	
	Employment	12			4			6	73	72				6	2	6	1	2	188	
Jefferson	Plants	38	4		16	4	3	8	11	8			7		12	4	1	8	124	
	Employment	19		1	5		27		20	8			11		9				124	
Morehouse	Plants	2			11	1	6	3	1										24	
	Employment				1			27											31	
Orleans	Plants	170	2	8	67	40	28	14	120	60	2	1		25	8	70	37	3	33	4,712
	Employment	99	8	22	51	6	8	8	24	9	3			20	3	22	11	8	1	364
Ouachita	Plants	31			3	48	9	8	8	8	1			6	3	7			131	
	Employment	3			2	8	3	26	2	11									68	
Rapides	Plants	23			1	48	4	1	6	4				4	1	3	2		101	
	Employment	8			22			1	2						1	1	1		41	
St. Bernard	Plants	10				1			2	1	2								20	
	Employment	13									2				30				46	
St. Charles	Plants	3				1					3	2							0	
	Employment																		26	
St. Mary	Plants	18				5			2	3				2		1	1	16	47	
	Employment	11				2			2									3	21	
Tangipahoa	Plants	22			3	29	1	1	4					4			2		67	
	Employment	4			17													28		

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

LOUISIANA (continued)	COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census															Total				
		Feed	To-bacco	Tex-tile Mill	Ap-parel	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fair. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-struments	
Washington	Plants	8	...	...	1	11	1	8	4	5	...	...	...	2	1	1	1	...	...	48
	Employment	1	...	...	2	3	...	30	...	...	...	...	...	...	...	...	...	...	...	38
Webster	Plants	8	...	...	1	27	2	4	4	2	...	...	...	2	1	1	...	2	...	51
	Employment	1	...	...	...	8	...	18	...	...	...	...	...	...	...	...	1	...	1	49
Total Above Counties	Plants	443	2	13	74	300	66	43	218	134	26	1	...	75	18	128	78	7	68	8	1,756
	Employment	203	8	23	62	93	13	137	46	166	138	48	38	53	17	...	56	1	1,178

MISSISSIPPI

Adams	Plants	10	...	2	28	...	3	8	...	1	...	...	...	...	...	...	...	...	47
	Employment	2	...	1	8	...	21	1	...	8	...	...	...	1	...	3	...	...	45
Alcorn	Plants	6	2	5	12	...	3	2	...	...	...	...	1	...	1	...	...	...	34
	Employment	1	1	12	2	...	...	...	...	...	...	...	...	...	...	...	...	...	20
Forrest	Plants	15	...	3	24	2	1	4	5	1	1	...	4	1	3	2	...	...	68
	Employment	4	...	10	3	...	1	...	11	...	...	...	...	...	...	...	...	...	34
Harrison	Plants	46	2	2	26	1	...	10	7	1	...	...	4	2	4	4	7	...	118
	Employment	18	...	9	2	...	...	1	3	...	...	...	1	...	1	...	...	...	38
Hinds	Plants	33	7	35	12	2	2	29	13	1	11	3	18	7	4	2	3	185	
	Employment	19	4	9	16	1	6	7	...	...	...	...	5	10	1	4	2	...	91
Jackson	Plants	7	1	2	18	1	2	1	2	3	...	...	1	...	...	7	1	...	47
	Employment	3	3	3	18	...	2	1	...	...	...	...	...	...	...	...	40	...	74
Jones	Plants	21	2	1	26	1	4	4	4	2	...	1	3	5	8	...	...	...	79
	Employment	3	5	12	...	...	26	...	1	...	...	...	...	...	2	...	...	...	56
Lauderdale	Plants	22	8	2	45	6	3	8	3	...	...	...	8	4	1	...	1	...	112
	Employment	7	8	6	11	...	5	1	...	...	...	...	1	1	1	...	...	...	45
Lea	Plants	11	8	8	2	1	2	2	...	...	...	3	1	1	2	...	...	...	41
	Employment	7	10	...	...	...	...	...	...	...	...	...	3	2	...	...	...	...	37
Lewndes	Plants	15	1	20	4	...	1	2	...	...	...	4	3	1	1	1	...	...	52
	Employment	4	9	10	2	...	...	1	...	...	...	3	...	...	1	1	...	...	41
Monroe	Plants	6	7	16	...	...	3	2	1	...	...	1	...	1	...	1	...	...	38
	Employment	22	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	28
Pike	Plants	14	2	1	22	1	4	1	...	...	...	3	1	1	2	...	...	...	51
	Employment	2	7	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23
Warren	Plants	11	1	18	...	...	6	2	2	...	...	2	...	2	1	2	2	...	47
	Employment	1	10	...	...	...	...	...	...	...	...	...	...	8	3	...	...	...	27
Washington	Plants	13	1	1	14	1	2	6	9	...	...	1	...	3	1	1	...	...	52
	Employment	4	7	...	7	...	4	2	...	...	...	1	...	1	...	...	...	...	27
Total Above Counties	Plants	230	...	18	43	308	31	18	82	84	9	2	1	46	6	44	30	7	19	5	871
	Employment	79	10	111	100	21	81	16	34	2	9	15	1	23	12	5	54	...	593		

NORTH CAROLINA

Alamance	Plants	18	84	5	17	9	2	7	1	...	1	3	1	...	2	...	1	...	183	
	Employment	3	134	1	2	6	2	...	...	...	...	...	...	...	6	7	2	1	32
Buncombe	Plants	28	19	10	40	6	1	18	7	...	1	5	4	...	1	1	1	2	163	
	Employment	9	...	...	10	1	...	8	31	...	1	...	...	...	...	...	...	...	67
Burke	Plants	4	35	2	42	11	2	4	...	...	...	...	...	...	...	1	1	1	102
	Employment	3	43	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	54
Cabarrus	Plants	13	26	3	8	...	1	6	1	...	1	1	1	...	3	...	...	...	63
	Employment	3	218	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	222
Caldwell	Plants	4	19	2	29	17	...	3	3	...	...	4	1	...	...	...	...	...	83
	Employment	31	4	5	87	...	1	...	...	...	...	1	...	...	...	...	...	...	101
Catawba	Plants	20	112	11	36	58	3	12	8	...	2	9	7	10	1	2	...	...	286
	Employment	4	89	12	40	2	1	...	...	...	...	...	1	...	...	...	...	...	169
Chatham	Plants	10	6	1	78	4	...	1	...	...	...	2	...	...	...	...	...	...	99
	Employment	4	10	1	7	9	...	...	...	...	...	1	...	...	...	...	...	...	33
Cleveland	Plants	18	28	...	8	3	2	2	2	...	1	6	1	1	1	2	...	...	76
	Employment	6	64	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	75
Columbus	Plants	6	3	33	...	1	3	2	...	...	1	...	1	1	1	...	...	...	51
	Employment	2	2	10	...	6	...	...	...	...	...	...	...	...	...	...	...	...	22
Cumberland	Plants	13	8	2	31	8	2	4	...	...	4	1	2	1	...	...	...	...	75
	Employment	4	21	1	12	...	6	...	...	...	5	...	2	...	...	...	...	...	43
Davieen	Plants	18	34	9	74	28	8	2	1	...	1	8	2	1	...	...	...	...	161
	Employment	8	33	38	12	84	1	...	...	...	3	...	3	...	...	...	...	...	150
Durham	Plants	22	7	19	8	26	4	1	21	8	...	2	4	1	1	...	2	...	122	
	Employment	7	67	36	5	7	1	...	16	3	...	1	...	1	...	...	7	...	153
Edgecombe	Plants	12	2	3	14	3	0	4	...	...	5	...	2	...	2	1	...	...	53
	Employment	1	3	9	3	...	...	...	...	...	3	...	3	...	...	...	...	...	25
Forsyth	Plants	38	10	20	3	22	12	3	22	10	...	7	3	9	12	5	4	3	187	
	Employment	13	96	97	2	8	10	2	4	1	...	1	4	5	52	...	...	...	300
Gaston	Plants	15	102	4	18	...	1	15	8	...	2	5	4	8	38	1	1	...	219	
	Employment	3	244	1	1	...	2	...	...	...	1	...	8	2	3	...	...	...	271
Gulford	Plants	47	2	69	18	66	109	10	49	27	1	8	2	13	7	26	37	1	3	508
	Employment	24	4	106	30	11	46	7	8	9	1	1	6	1	9	7	10	7	...	378

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Industrial Potentials by Counties—(Cont'd)

NORTH CAROLINA (continued)	COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census															Total				
		Food	Tobacco	Taxile Mill	Ap-parel	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-stru-mnts	
Halifax	Plants	9	—	8	—	56	3	3	3	2	—	—	—	2	—	1	—	—	—	85	
	Employment	2	—	40	—	7	—	16	—	—	—	—	—	—	—	—	—	—	—	63	
Harnett	Plants	5	—	1	2	34	1	—	4	2	—	—	—	3	—	1	2	1	—	56	
	Employment	2	—	23	—	—	—	—	—	—	—	—	1	3	1	—	—	—	—	28	
Haywood	Plants	5	—	1	—	12	3	2	3	4	—	—	10	4	—	—	—	—	—	38	
	Employment	1	—	—	—	2	8	18	—	—	—	—	—	—	—	—	—	—	—	44	
Henderson	Plants	8	—	13	3	7	1	1	4	1	—	—	6	5	—	1	1	—	—	48	
	Employment	—	—	18	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	23	
Iredell	Plants	25	—	18	13	34	15	1	7	3	—	—	1	6	2	2	3	—	—	132	
	Employment	7	—	18	11	17	22	—	1	—	—	—	—	—	2	2	10	—	—	93	
Johnston	Plants	12	1	8	2	32	—	—	4	5	—	—	—	2	—	2	1	—	—	66	
	Employment	1	1	10	3	5	—	—	—	1	—	—	—	—	—	—	—	—	—	25	
Lee	Plants	8	1	2	2	51	2	—	4	6	—	—	—	6	2	2	2	1	—	89	
	Employment	1	—	4	—	15	—	—	—	—	—	—	—	9	—	—	—	—	—	39	
Lenoir	Plants	10	5	2	3	11	2	1	4	4	—	—	—	5	1	3	—	—	—	51	
	Employment	3	40	20	8	3	—	—	—	—	—	—	—	1	1	—	—	—	—	79	
Lincoln	Plants	9	—	15	—	16	7	—	3	—	—	—	—	3	2	2	3	—	—	61	
	Employment	—	—	31	—	1	5	—	—	—	—	—	—	—	—	—	—	—	—	39	
McDowell	Plants	2	—	24	1	13	3	2	2	—	—	—	—	3	—	—	—	—	—	51	
	Employment	—	—	32	—	1	14	—	—	—	—	—	—	—	—	—	—	—	—	50	
Mecklenburg	Plants	84	52	21	21	21	12	45	33	1	4	3	14	6	28	44	3	3	4	385	
	Employment	45	74	8	3	8	7	14	10	—	—	—	6	5	8	19	12	2	—	223	
Montgomery	Plants	5	11	2	70	3	—	2	—	—	1	—	2	—	—	—	1	—	—	97	
	Employment	—	18	3	7	1	—	—	—	—	—	—	—	—	—	—	—	—	—	31	
Moore	Plants	8	9	3	51	2	—	9	2	—	1	—	3	—	—	—	—	—	—	91	
	Employment	—	14	—	3	5	—	—	—	—	—	—	—	—	—	—	—	—	—	26	
Nash	Plants	12	3	7	2	28	2	—	6	1	—	—	—	3	—	1	1	1	—	67	
	Employment	7	35	30	1	5	—	—	2	—	—	—	—	—	—	—	—	—	—	81	
New Hanover	Plants	27	—	4	7	28	2	1	8	10	1	—	—	5	3	2	1	1	1	101	
	Employment	—	26	—	12	—	—	—	9	7	—	—	—	11	—	7	—	—	—	73	
Persim	Plants	4	—	3	—	20	1	—	2	1	—	—	—	—	—	—	—	—	—	34	
	Employment	—	17	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23	
Pitman	Plants	10	5	3	1	19	1	—	6	3	—	—	—	2	1	3	1	1	—	56	
	Employment	4	24	2	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	36	
Randolph	Plants	12	—	60	8	82	16	1	6	—	—	1	5	—	—	2	2	—	—	200	
	Employment	5	—	30	42	7	12	—	—	—	—	—	—	—	—	—	—	—	—	105	
Richmond	Plants	11	—	6	1	20	3	2	2	1	—	—	—	3	2	—	—	—	—	84	
	Employment	2	—	36	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	44	
Rutherford	Plants	9	4	5	1	28	2	—	3	4	—	—	—	2	2	2	2	—	—	67	
	Employment	1	34	15	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	59	
Rockingham	Plants	13	3	16	6	28	4	—	6	—	—	—	—	4	—	1	2	—	—	83	
	Employment	1	28	57	6	5	1	—	—	—	—	—	—	—	—	—	—	—	—	102	
Rowan	Plants	27	—	14	7	27	6	1	5	3	1	—	—	9	8	4	4	—	—	111	
	Employment	6	—	57	—	2	1	2	1	1	—	—	—	3	—	2	—	—	—	79	
Rutherford	Plants	8	—	19	3	41	2	—	4	—	—	—	1	2	—	—	—	—	—	80	
	Employment	1	—	59	4	5	—	—	—	—	—	—	—	—	—	—	—	—	—	72	
Stanly	Plants	15	—	12	1	20	4	—	3	—	—	—	—	4	1	2	—	—	—	64	
	Employment	2	—	45	11	4	—	—	1	—	—	—	—	1	8	—	—	—	—	75	
Surry	Plants	9	—	27	7	43	8	2	4	1	—	—	1	7	1	—	—	—	—	107	
	Employment	1	—	84	8	3	9	—	—	—	—	—	—	—	—	—	—	—	—	82	
Transylvania	Plants	1	—	3	—	16	1	1	1	—	—	—	—	2	1	—	—	—	—	27	
	Employment	—	—	1	—	4	—	14	—	4	—	—	—	3	—	—	—	—	—	29	
Union	Plants	12	—	8	7	16	1	1	4	2	—	—	—	—	1	—	1	1	—	55	
	Employment	—	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20	
Vance	Plants	6	1	6	—	8	—	—	2	1	—	—	—	1	—	1	1	1	—	28	
	Employment	—	20	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	26	
Wake	Plants	28	2	5	2	62	7	1	21	5	1	—	—	7	1	8	4	3	3	107	
	Employment	14	1	10	2	2	—	—	6	1	—	—	—	1	—	1	—	12	—	55	
Wayne	Plants	21	1	1	—	24	3	—	7	4	—	—	—	3	1	3	2	—	—	71	
	Employment	5	7	2	—	7	—	—	—	—	1	—	—	1	1	—	1	—	—	31	
Wilkes	Plants	7	—	4	2	61	18	—	3	—	—	—	—	4	1	—	1	—	—	100	
	Employment	2	—	7	3	2	14	—	—	—	—	—	—	2	—	—	—	—	—	34	
Wilson	Plants	18	4	1	3	22	3	—	3	3	—	—	—	3	—	1	—	3	—	83	
	Employment	3	4	3	3	3	—	—	—	1	—	—	—	—	—	—	—	—	—	25	
Total Above Counties	Plants	693	51	944	183	1,530	408	59	389	180	4	17	31	190	38	126	190	26	33	13	6,205
	Employment	228	350	2,022	220	250	336	78	86	90	9	12	50	21	43	73	99	58	8	4,083	

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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SM SIC Industrial Potentials by Counties—(Cont'd)

SOUTH CAROLINA (continued)	COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment)—NUMBER OF PLANTS, 1954 Census																			
		Food	To-bacco	Tex-tile Mill	Ap-parel	Lum-bar (ex- c. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Pet- rol and Coal	Rub-ber	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments	Total	
Charleston	Plants	35	1	2	9	38	5	3	13	15	1	1	1	4	2	8	4	8	4	151	
	Employment	7	14	2	14	10	1	13	4	8	..	..	..	9	2	..	4	1	97	
Cherokee	Plants	4	..	11	3	13	..	..	3	4	..	..	..	3	..	..	1	..	..	42
	Employment	1	..	35	6	..	..	..	..	..	..	..	..	1	..	..	..	..	..	48
Chester	Plants	5	8	1	27	1	..	..	2	1	..	..	..	1	..	..	..	..	..	46
	Employment	..	..	41	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	44
Chesterfield	Plants	5	9	4	36	..	..	..	3	2	..	..	..	2	..	..	..	..	..	60
	Employment	..	..	5	7	6	..	..	..	..	..	..	..	..	..	..	..	..	..	21
Darlington	Plants	4	6	1	28	1	4	3	3	..	..	..	..	3	..	..	1	..	..	51
	Employment	..	..	18	4	5	19	..	..	2	..	..	..	..	..	..	..	..	..	50
Fairfield	Plants	1	1	2	74	..	..	..	1	..	..	..	..	4	..	..	..	..	..	83
	Employment	..	..	15	1	3	..	..	..	..	..	..	..	1	..	..	..	..	..	23
Florence	Plants	18	2	4	6	34	3	..	8	3	..	..	..	3	..	..	2	..	..	84
	Employment	4	1	4	9	10	1	..	..	..	..	..	..	..	..	..	..	..	..	33
Georgetown	Plants	3	..	1	1	56	..	4	3	1	..	..	..	..	..	..	..	..	..	68
	Employment	..	..	1	..	7	..	20	..	..	..	..	..	..	..	..	..	..	..	30
Greenville	Plants	40	38	19	46	9	4	24	18	..	2	3	5	14	21	..	1	1	248		
	Employment	16	191	44	3	..	3	8	8	..	..	..	8	1	16	..	..	..	..	295
Greenwood	Plants	9	10	12	27	..	..	..	3	3	..	..	6	..	..	..	..	..	..	74
	Employment	2	83	8	4	..	..	..	..	..	..	..	1	..	..	..	..	..	..	104
Kershaw	Plants	4	3	1	36	..	..	..	2	2	..	..	2	1	1	1	..	..	..	82
	Employment	..	..	11	4	4	..	..	17	..	..	..	..	..	..	..	..	..	..	38
Lancaster	Plants	6	3	..	15	..	..	..	3	5	..	..	2	..	..	..	..	..	..	35
	Employment	1	70	..	2	..	..	..	..	1	..	..	1	..	..	..	..	..	..	76
Laurens	Plants	8	11	2	17	..	1	5	2	..	..	..	2	..	..	..	..	..	..	65
	Employment	..	53	3	2	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..
Lexington	Plants	21	4	1	44	5	2	3	3	..	..	..	4	2	3	1	..	..	..	90
	Employment	2	9	..	5	..	..	..	1	1	..	..	2	..	..	..	..	..	..	25
Marlboro	Plants	8	4	..	8	2	..	..	1	1	..	..	1	..	..	..	..	..	..	27
	Employment	2	17	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Newberry	Plants	7	5	4	53	..	..	..	3	..	..	..	..	..	..	..	..	..	..	73
	Employment	..	29	3	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	41
Oconee	Plants	4	7	4	37	..	..	..	8	2	..	..	1	..	..	..	..	..	..	61
	Employment	..	47	11	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	62
Orangeburg	Plants	12	2	3	49	3	..	..	5	4	..	..	1	..	..	..	..	..	..	81
	Employment	7	5	2	16	..	..	..	1	..	..	..	..	..	..	..	..	..	..	35
Pickens	Plants	5	11	7	27	1	..	1	..	..	..	..	1	..	..	..	..	..	..	56
	Employment	..	35	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	44
Richland	Plants	27	3	11	30	4	1	22	10	4	..	..	11	1	8	4	1	2	1	147
	Employment	9	30	12	4	..	..	..	8	2	..	..	7	3	..	..	..	..	..	82
Spartanburg	Plants	19	37	8	23	4	4	11	15	1	..	1	4	3	5	10	..	1	149		
	Employment	7	189	36	3	..	..	..	3	3	..	..	4	2	4	..	..	..	..	256
Sumter	Plants	13	2	4	23	6	..	4	3	..	..	..	2	..	3	..	..	1	..	64
	Employment	2	2	1	11	10	..	..	..	..	..	..	..	1	..	..	..	..	..	32
Union	Plants	4	10	1	22	..	..	..	4	1	..	..	2	..	1	..	..	..	..	45
	Employment	..	49	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52
York	Plants	11	24	2	17	1	1	4	3	..	..	..	1	1	..	..	3	1	..	89
	Employment	1	106	..	1	..	..	..	19	..	..	..	..	..	..	..	..	..	..	131
Total Above Counties	Plants	310	3	284	119	603	49	25	150	106	7	3	6	78	9	48	55	2	12	6	2,081
	Employment	76	15	1,281	201	122	19	80	30	198	2	..	48	7	10	29	6	1	2,121

TENNESSEE

Anderson	Plants	3	1	11	1	..	2	1	..	..	..	..	3	..	..	1	..	..	..	23
	Employment	..	9	..	1	..	..	..	112	..	..	..	..	..	..	..	..	..	..	124
Bedford	Plants	9	4	4	9	1	2	3	1	..	1	3	2	..	..	..	1	..	..	47
	Employment	1	6	6	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27
Blount	Plants	10	2	1	16	..	..	..	2	1	..	..	1	3	4	1	3	..	..	44
	Employment	1	1	2	..	..	..	..	..	..	..	..	..	78	1	..	..	..	..	..
Bradley	Plants	10	8	3	18	13	..	8	2	..	..	..	4	1	6	1	..	..	..	69
	Employment	1	14	2	5	..	..	..	..	..	..	..	..	19	..	..	..	..	..	..
Carter	Plants	6	4	2	17	1	1	1	2	..	..	..	3	..	..	1	..	..	..	56
	Employment	..	48	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	41
Coffee	Plants	8	..	5	11	..	1	2	..	..	..	..	4	..	..	1	..	..	..	22
	Employment	1	..	6	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Davidson	Plants	94	3	5	18	41	22	10	86	29	3	8	12	20	3	40	21	13	8	462
	Employment	48	3	20	21	8	11	4	33	66	2	16	9	1	24	8	6	37	4	329
Gibson	Plants	12	3	3	10	..	1	8	2	..	1	2	2	..	..	..	..	..	..	44
	Employment	2	14	14	3	..	..	..	..	..	12	4	..	..	..	..	..	..	..	..
Greene	Plants	9	1	2	1	6	..	1	4	1	..	1	3	..	2	1	2	..	..	33
	Employment	5	2	4	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	43
Hamblen	Plants	12	8	1	8	13	..	8	2	..	..	1	1	..	..	..	..	..	..	41
	Employment	3	19	..	..	9	..	..	7	..	..	..	..	..	..	..	..	..	..	..
Hamilton	Plants	61	37	9	38	24	7	48	21	2	3	8	18	17	33	29	8	8	1	365
	Employment	27	70	9	13	13	17	9	82	2	27	37	71	27	1	..	..	..	..	387

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

TENNESSEE (continued)	COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment)-NUMBER OF PLANTS, 1954 Census																			
		Food	To-bacco	Tex-tile Mill	Appar-	Lum-	Furn.	Paper	Print's	Chem-	Petr,	Rubber	Leath-	Stone,	Prim.	Fabr.	Mach.	Elec.	Trans.	In-	
Knox.	Plants	61	—	10	14	23	18	5	39	11	2	—	3	28	6	21	19	3	1	3	279
	Employment	34	—	57	28	7	6	3	9	8	—	—	—	17	5	4	9	—	22	218	
Laudon.	Plants	8	—	2	—	11	1	—	1	—	—	1	—	2	1	1	—	—	—	28	
	Employment	2	—	10	—	1	2	—	—	—	—	—	—	1	—	3	—	—	—	20	
McMinn.	Plants	5	—	17	3	24	10	3	3	2	—	—	—	3	—	1	3	1	—	76	
	Employment	—	—	12	1	3	4	3	—	—	—	—	—	—	—	—	—	—	—	29	
Madison.	Plants	26	—	1	3	11	4	—	—	8	4	—	—	1	—	—	1	1	—	61	
	Employment	3	—	12	3	2	1	—	—	—	—	—	—	—	—	—	—	—	—	30	
Maury.	Plants	15	—	3	3	8	2	—	—	3	5	—	—	2	1	2	1	1	—	46	
	Employment	1	—	3	4	—	—	—	—	1	17	—	—	1	1	—	—	—	—	41	
Shelby.	Plants	115	2	3	36	63	50	19	74	63	6	6	4	17	10	64	44	7	12	4	832
	Employment	79	4	12	17	61	30	36	20	46	3	41	1	5	3	20	45	8	25	1	464
Sullivan.	Plants	16	—	4	3	12	3	3	11	6	—	—	—	6	6	3	4	1	1	1	82
	Employment	7	—	24	10	2	—	14	17	110	—	—	—	12	1	1	—	—	—	—	202
Washington.	Plants	23	—	3	2	16	7	1	4	2	—	—	1	8	—	3	4	1	—	73	
	Employment	4	—	12	2	8	6	2	1	—	—	—	1	1	—	2	—	—	—	41	
Total Above Counties.	Plants	502	0	117	111	344	170	54	295	155	13	17	37	123	49	176	134	36	29	13	2,493
	Employment	224	10	353	129	125	91	54	97	423	6	58	31	78	126	140	92	56	68	27	2,267

VIRGINIA

Albermarle.	Plants	14	—	4	3	32	1	—	7	1	—	—	—	3	—	3	2	1	—	1	73
	Employment	2	—	13	3	4	4	—	1	—	—	—	—	—	—	—	—	—	—	—	35
Alleghany.	Plants	7	—	1	2	8	—	3	3	2	—	—	—	1	—	1	—	—	—	—	26
	Employment	2	—	7	—	—	—	16	—	5	—	1	—	—	—	—	—	—	—	—	35
Arlington.	Plants	18	—	—	1	5	4	1	22	6	1	—	—	10	1	10	4	4	1	2	93
	Employment	8	—	—	—	—	—	—	1	1	—	—	—	4	—	5	—	—	—	—	23
Augusta.	Plants	26	—	9	5	15	2	—	10	4	—	—	—	8	—	2	4	1	—	—	89
	Employment	4	—	17	9	1	5	—	1	31	—	—	—	4	3	1	8	—	—	—	89
Campbell.	Plants	27	1	0	13	40	5	4	13	5	1	1	7	7	5	3	7	2	1	1	150
	Employment	6	—	27	18	5	12	8	2	4	—	29	—	13	—	—	—	—	—	—	138
Carroll.	Plants	5	—	7	—	40	5	—	1	—	—	—	—	2	—	—	—	—	—	—	66
	Employment	—	—	9	—	4	10	—	—	—	—	—	—	1	—	—	—	—	—	—	25
Chesterfield.	Plants	2	—	—	—	27	2	—	—	5	—	—	—	5	1	—	—	—	—	—	42
	Employment	—	—	—	—	4	—	—	—	39	—	—	—	2	—	—	—	—	—	—	47
Dinwiddie.	Plants	13	4	2	8	30	3	—	9	1	—	—	—	1	3	1	4	2	—	2	66
	Employment	2	—	23	1	7	4	—	1	—	—	—	—	6	—	2	—	—	—	—	63
Frederick.	Plants	20	—	8	—	8	2	—	3	1	—	2	—	6	1	1	—	1	—	—	55
	Employment	13	—	10	—	3	—	—	—	—	—	3	—	1	—	—	—	—	—	—	34
Giles.	Plants	1	—	—	—	11	—	—	2	1	—	—	—	1	4	—	—	—	—	—	20
	Employment	—	—	—	—	1	—	—	19	—	—	—	—	1	2	—	—	—	—	—	25
Halifax.	Plants	5	4	3	—	22	—	—	3	—	—	—	—	—	—	—	—	—	—	—	39
	Employment	—	5	14	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26
Henrico.	Plants	65	12	2	27	37	26	27	104	32	3	3	—	6	18	8	28	20	1	6	433
	Employment	49	90	4	28	16	7	34	28	14	—	1	4	3	24	8	—	—	—	—	314
Henry.	Plants	4	—	11	4	68	13	2	6	3	—	1	—	4	—	—	1	—	1	—	110
	Employment	—	29	18	11	40	1	—	33	—	—	—	—	3	—	—	—	—	—	—	140
Isla of Wight.	Plants	7	—	—	—	15	—	3	1	—	—	—	—	1	—	—	1	—	1	—	29
	Employment	4	—	—	—	3	—	18	—	4	1	—	—	1	—	—	—	—	—	—	26
Mecklenburg.	Plants	4	—	3	2	42	—	—	4	1	—	—	—	1	—	—	—	—	—	—	58
	Employment	—	—	6	0	10	—	—	—	—	—	—	—	1	—	—	—	—	—	—	27

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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ALL INDUSTRY THRIVES IN LYNCHBURG

Lynchburg (Campbell County) is the most diversified industrial region in central Virginia, with employment in every S.I.C. manufacturing category. In only 8 of these are there less than 100 employees. See Virginia table above.

For any manufacturing industry, Lynchburg is a proven site for successful operation!

LYNCHBURG CHAMBER OF COMMERCE Lynchburg, Virginia
SITES AVAILABLE • LOCAL CAPITAL WILL ASSIST NEW, SELF-SUSTAINING INDUSTRY

Contact the Lynchburg C of C for detailed information on these features:
Central Virginia, 200 miles from Hampton Roads and Norfolk.

3 trunk railroads, 19 motor freight lines, 3 passenger bus (1 urban), 3 U.S. Highways — 29, 460, 501.

Favorable Labor . . . Water Supply abundant; Natural Gas; Adequate Electricity . . . Reasonable Taxes . . . Diversified Industry — 96 manufacturers . . . Very best Living Conditions; ideal year-round climate . . . Excellent Schools—4 colleges, 21 public schools, with outstanding vocational training.



Industrial Potentials by Counties—(Cont'd)

VIRGINIA
(continued)

COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment)-NUMBER OF PLANTS, 1954 Census																			
	Food	To-holes	Tex-Mill	Ap-paral	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print's and Publ.	Chem- ical	Petr. and Coal	Rubber	Leath- er	Stone, Clay, Glass	Prim. Metal	Fahr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments	Total
Nansemond	Plants	18			1	27	1	1	3	2		1		4		3	1	1	61	
	Employment	23				4													31	
Newport News	Plants	32		1	6	14	9	1	15	4		1		8	7	3	1	7	3	116
	Employment	7			1	1		3	6					6	1		3	117	200	
Norfolk	Plants	72	1	2	25	30	23	1	39	28	1	1	3	12	7	22	12	1	17	310
	Employment	22		3	10	19	3		9	28				4	3	9	2		30	95
Orange	Plants	4				16	1		1								2	1		30
	Employment				5	8	6													21
Pittsylvania	Plants	27	6	3	8	52	2		9	3				5	1		4			119
	Employment	5	15	106	1	5			1								1			137
Prince George	Plants	4		1		13		4	2	3				1	1		2			33
	Employment					1		6		31										42
Pulaski	Plants	3		6	1	12	1		3	4				2	1					33
	Employment			10	3	2	4			2										24
Roxana	Plants	41		3	8	14	10	1	10	11		1	1	12	3	11	7	1	2	149
	Employment	23		14	17	1	9		6	28			4	3	2	20	1		1	131
Rockbridge	Plants	6		3	1	11	1	3	3	1			2	2	1		1			35
	Employment			20		1		3					1							30
Rockingham	Plants	28		2	5	14	5	1	7	8				2	1	4	4	1		85
	Employment	12		6	8	2	2		1	8										40
Smyth	Plants	6		2	2	11	3		1	2			1	1	1	1	1			32
	Employment	1		14	5	1	2			8										35
Spotsylvania	Plants	7			4	37			4	1			1	2		2	1			60
	Employment	1			7	4				28			2							44
Warren	Plants	8		1		4			1	3				3	1					18
	Employment	1		2						20			1							26
Washington	Plants	18		4	4	14	4	2	6	4				3		2	3	2		69
	Employment	8		3	5	3	10		1					1		4	2			42
Total Above Counties	Plants	485	28	89	125	1,140	123	54	300	138	6	12	25	130	31	101	84	13	38	1,064
	Employment	206	136	330	180	133	116	81	70	287	1	6	50	48	27	71	26	4	151	1,986

SOUTHWEST STATES

ARIZONA

Maricopa	Plants	109			28	29	34	1	74	23	2		6	34	5	30	43	2	11	3	461
	Employment	24			3	6	2		13	5			5	28	9	7		52		161	
Pima	Plants	35			13	8	9	1	24	6	2	1	2	13	3	10	4	1	4	4	150
	Employment	5			1				5				4	1				25		48	
Total Above Counties	Plants	144			41	37	43	2	98	29	4	1	8	47	8	40	47	3	15	7	611
	Employment	29			6	6	3		19	5			9	28	10	8		77		209	

NEW MEXICO

Bernalillo	Plants	36			18	19	13		32	3	1		1	12	1	9	15	1	1	4	180
	Employment	9			1	4			6	60			3	3	1	1	1	1		103	
Total Above Counties	Plants	36			18	19	13		32	3	1		1	12	1	9	16	1	1	4	180
	Employment	9			1	4			6	60			3	3	1	1	1	1		103	

OKLAHOMA

Kay	Plants	19			1	2	1		8	1	2			1	4	1	8		1		50
	Employment	3							1	22				1	8		2				41
Muskogee	Plants	32			1	3	5	1	11	1			1	4		3	4				68
	Employment	9							1					6	2						25
Oklahoma	Plants	94		1	18	21	30	4	80	28	8	2	3	15	8	46	58	3	10	8	467
	Employment	58			2	4	10	1	22	3	4			2	1	24	14	1	8		165
Okmulgee	Plants	12				2				6	1			1	6	2	3	1			31
	Employment	1								1	1			1	18	6					20
Stephens	Plants	5				2			5		2			1	1	4					23
	Employment								1	20				1		1					23
Tulsa	Plants	65		1	14	13	21	1	68	17	7	2		20	16	69	137	10	18	17	520
	Employment	10		1	2	1	1	1	14	4	20			5	10	38	63	4	94	4	300
Total Above Counties	Plants	227		2	32	41	68	6	178	45	20	5	4	47	30	123	212	13	29	23	1,162
	Employment	93		10	4	7	12	3	42	8	69	1		34	28	66	83	5	102	4	588

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Industrial Potentials by Counties—(Cont'd)

TEXAS (continued)	COUNTY	EMPLOYMENT, 1954, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census																		
		Feed	To-bacco	Tex-tile Mill	Ap-parel	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print's and Publ.	Chem-ical	Petr. and Coal	Rub-ber	Stone, Clay, Glass	Prim. Metal	*Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments	Total
Bowie	Plants	13			1	24		7	3				3		2		1	1	56	
	Employment	4				13		2					2						42	
Brazoria	Plants	4			3	2		3	5	2			2	2	1		2		26	
	Employment								68	1			2						78	
Cameron	Plants	47		7	2	3	4	1	13	9	1		4		3	7	8		112	
	Employment	18			2				2	2									29	
Dallas	Plants	178	1	13	179	48	78	29	230	96	8	10	11	50	20	134	182	28	24	23 1,309
	Employment	114	10	79	9	30	22	56	24	21	3	2	16	9	42	64	83	263	7	800
Ellis	Plants	9	1	9		5	1	0	4				3		6	3				52
	Employment	1				7	1		3	1										20
El Paso	Plants	57		14	8	9		29	12	2			7	11	3	13	3	1	1	180
	Employment	15		42	1			5	3	16			1	3	20	3				118
Galveston	Plants	26	1	3	1	8		13	8	4			2	1	5	4	3	7		87
	Employment	12							3	40	30			0	1	1	14			115
Grayson	Plants	25		2	0	5	6	2	13	1			1	3	5	4				70
	Employment	11	8	5	2			2							2					42
Gregg	Plants	15		3	13	5	1	11	2	7			8	2	4	8		2		83
	Employment	2			2			2		2			1	2	14					33
Harris	Plants	164	9	56	88	77	16	173	106	21	8	8	68	46	161	248	24	40	30 1,401	
	Employment	98	6	19	15	28	30	41	88	138	4		23	58	86	180	11	13	7	866
Harrison	Plants	12		2	18	2		3	4				8	4	2	3				60
	Employment	2		3	6				6				2	0						30
Hidalgo	Plants	50		2	9	3	1	18	2	2		1	9	3	9	3				116
	Employment	13		2	1			1	1				2							24
Hunt	Plants	16	3	7	3	2		10	2				1			3		2		50
	Employment	3		8				1	1										22	
Hutchinson	Plants	4						2	8	4					7					22
	Employment								14	15										30
Jefferson	Plants	47		3	17	17	1	19	11	9			9	8	15	16	3	11		190
	Employment	11			5		1	8	15	178			1	2	10	9		16		264
Lubbock	Plants	37		4	11	9	1	16	9	1			6	1	7	20	1			127
	Employment	11						1	2	5			2	1	2	1				29
McLennan	Plants	47	2	18	7	8		24	7	1	1	1	8	1	9	3	1	1	148	
	Employment	12	8	13	5	4		4	1	11	14		8	2	1	2				99
Navarro	Plants	14	2	4	3	2	1	5	1				2	1		2				30
	Employment	4	4	4									3		1					20
Nueces	Plants	43		2	5	10		23	9	5	1		8	5	10	14	8	1	150	
	Employment	15			1			4	20	12			2	7	2	2				60
Orange	Plants	7			7	3	2	4	4				2	1	3					30
	Employment	1			3			2	22				16							37
Potter	Plants	37		3	6	11		18	5	2		4	2	4	8	10	1	1	118	
	Employment	10			1	1		4	1	1			6	1	3					31
San Patricio	Plants	5						4	2				1		1					13
	Employment	1							1				19							23
Smith	Plants	24		4	10	10		10	4	3			8	3	11	7	1	2	101	
	Employment	6		4	1	1		2		1			3	11	7	8				46
Tarrant	Plants	102	1	3	23	32	41	12	101	29	9	3	11	16	20	54	64	10	28	8 601
	Employment	97		14	4	10	12	20	8	10		2	5	10	12	21		294	1	540
Taylor	Plants	24		4	2	3		14	3	2		3	4		2	3		1	2	73
	Employment	8						2	1	1			1							4 28
Travis	Plants	39		3	4	12		31	8	1		2	12	1	7	5	1	2	5 143	
	Employment	10		1	1	4		9	1				3	1		1				37
Wichita	Plants	26		8	3	4		11	5	3		2	4	3	9	17		1		101
	Employment	7		4				2	1	2			1	2	9					32
Total Above Counties	Plants	1,216	3	45	405	387	370	81	901	382	90	24	59	276	138	512	662	78	160	81 6,154
	Employment	561	1	39	250	98	90	63	207	341	444	22	10	93	206	190	343	77	626	26 2,705

CENTRAL STATES

ILLINOIS

Adams	Plants	28	1	5	2	3	5	10	3		1	1	6	4	6	10	5	1	2	112
	Employment	16		1		1	6	3	2				6	2	3	33	19	7		103
Champaign	Plants	21		2	1	3		23	6		1	1	6	2	3	7	1	1		81
	Employment	2			3	1		3	2		1		2	4		2				22
Coles	Plants	15		1	8	2		7	2			4	3	2		3	1	2		84
	Employment	2				6					7		3	4	6	8	1			32
Cook	Plants	1,048	23	91	1,034	307	509	308	1,886	615	56	78	184	320	308	1,781	1,571	861	192	278 12,020
	Employment	945	8	66	354	70	160	213	777	286	42	66	68	123	575	866	1,160	1,205	465	245 8,134
DeKalb	Plants	16	1	3	1	1		13	3				4	6	13	15	8			87
	Employment	4		3				4					6	8	6	20				64
Du Page	Plants	26	1	6	11	10		24	11			2	7	7	36	37	15	2	8	226
	Employment	5			1	12		6	8				1	4	6	1				54
Effingham	Plants	9		3	3	1		7					1				2			26
	Employment	1		3	2										16					24

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

ILLINOIS (continued)	COUNTY	SM EMPLOYMENT, 1956, In hundreds (Counties with 2,000 or over total industrial employment)														NUMBER OF PLANTS, 1954 CENSUS					
		Food	To-bacco	Tex-tile Mill	Ap-parel	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rub-ber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-struments	Total
Fulton	Plants	7			2	5	1		8	1					2		2	1	...	1	30
	Employment					1											18		...	21	
Grundy	Plants	4			6	1	1	4	4	3				3	1	1	2	...	1	31	
	Employment					2		12		1				1				...	21		
Henry	Plants	15			2	3	1		11	1				4	1	6	8	1	2	...	56
	Employment	2			4				1							6	25	...	42		
Jackson	Plants	12			3	9			6	1			1	3	1	1	1	1	1	...	40
	Employment	2			5	1				1			7				7	...	25		
Jefferson	Plants	11			1	6	1		4	1			1		1	2	4	3	1	...	37
	Employment	2			2	1							4		3	3	1	4	1	...	24
Kane	Plants	48	2	18	17	23	8	40	11	2			1	16	17	39	63	17	11	4	389
	Employment	13		12	3	33	8	16	3				1	4	3	20	63	22	14	1	254
Kankakee	Plants	15	1	5	3	4	5	3	11	7	1			10	3	13	11	1	...	102	
	Employment	8		8	10		10	2	1	9	2			3	2	20	11	1	...	98	
Knox	Plants	14		4	5	1	1	12	5				4	1	6	7	1	...	64		
	Employment	1		4	3			2	1				3		11	26	...	55			
Lake	Plants	36	1	7	12	9	6	39	19	2	1	2	15	9	33	53	21	1	1	281	
	Employment	12		2	1	2	7	12	37	3		3	21	27	19	65	29	...	247		
La Salle	Plants	35	1	8	3	2	2	20	4	1			23	6	15	16	3	1	1	147	
	Employment	8		3	3	1	4		5	2			68	7	8	8	11	5	40	180	
Lee	Plants	18	1		3	1	1	8				2	3	1	3	1	...	44			
	Employment	2			1			1				5	3	8	1	1	...	23			
McHenry	Plants	14	2	4	5	5	6	12	3	1	1		5	6	21	30	7	4	3	134	
	Employment	1											20	7	15	25	...	68			
McLean	Plants	23		2	8		1	20	3				3	1	5	11	5	...	85		
	Employment	8							5				1	2	20	27	...	68			
Macon	Plants	28		8	3	7	2	18	13			1	4	6	15	16	3	...	140		
	Employment	30		8		1		4	18			1		10	4	22	1	...	112		
Madison	Plants	48		8	14	2	7	22	8	7		2	17	18	15	11	4	4	3	199	
	Employment	18		8	2		16	3	11	81		7	32	145	8	10	2	10	...	346	
Marion	Plants	12		4	5			7	1	1		1	3	2	2	4	1	...	45		
	Employment	6											6		2	2	...	24			
Morgan	Plants	10		1	1			9					1	1	3	2	...	31			
	Employment	3		8	4			2					8			8	...	24			
Ogle	Plants	18	2	1	4	3		13					2	1	2	10	1	...	57		
	Employment	5		3				5	11				1	12			...	38			
Peoria	Plants	87	1	1	4	13	7	8	80	11		1	6	8	19	22	8	2	4	242	
	Employment	90		6	6		9	6	3			1	26	8	25	1	...	146			
Randolph	Plants	6	1	3	3	5		7				2		2	3	...	32				
	Employment	2		2	3			5				7		3		...	24				
Rock Island	Plants	44		4	9	6	1	20	4	1	3		5	20	18	48	3	6	1	198	
	Employment	10		3	7			8		3	12		14	10	196	1	...	270			
St. Clair	Plants	69	2	3	8	11	3	5	32	18	3	2	3	12	16	30	23	3	3	261	
	Employment	82		6	1			3	52	9	4	5	2	32	13	7	...	228			
Sangamon	Plants	39	1	2	9	6	2	31	8		1	1	8	3	15	14	7	2	2	185	
	Employment	21			1	1		7	1			8	2	1	11	92	33	...	149		
Stephenson	Plants	33		2			1	7	4			2	4	4	4	3	4	...	69		
	Employment	6						2	11				4	6	27	...	60				
Tazewell	Plants	13		3	6	1	1	8	1		1		8	4	6	14	1	1	1	71	
	Employment	25											2	1		266	3	1	1	304	
Vermilion	Plants	31	1	8	8		1	1	18	5	1		7	3	10	16	9	2	2	125	
	Employment	13		3				6	9			2	33	2	15	11	1	1	1	104	
Will	Plants	32	1	8	10	2	17	24	9	8	1		15	12	16	18	7	7	1	199	
	Employment	7		5	1		15	15	47	31	1		12	25	10	48	8	5	...	232	
Williamson	Plants	11	1	2	8	1		6	1				1	1	3	4	4	4	...	46	
	Employment	4		4	2								12	12		12	12	...	38		
Winnebago	Plants	43	8	6	16	22	6	42	8		1	3	13	21	71	141	4	11	4	440	
	Employment	12	5	1	1	16	2	7	6		1	1	1	16	130	140	3	38	16	414	
Total Above Counties	Plants	1,916	30	122	1,186	628	638	386	2,487	790	63	91	212	542	497	2,186	2,210	727	280	315	16,327
	Employment	1,329	9	98	472	121	279	296	927	616	150	87	156	294	972	1,228	2,295	1,482	578	308	12,084

INDIANA

Adams	Plants	10			4	6	4		3	2			4	1	2	2	1			39
	Employment	1			1		3			6						7		2	22	
Allen	Plants	68	1	1	10	13	9	5	37	13	2	2	1	10	13	25	61	18	7	308
	Employment	28	6	8	2	2	3	8	3		21			28	5	38	141	89	...	390
Bartholomew	Plants	17			2	9	5	1	7	3			2	2	4	10	14	5		84
	Employment	3		9	1	4							2	2	1	36	22	...	79	
Cass	Plants	15			1	4	2		6	2			1	0	6	2	3	2	35	
	Employment	1		3				1		4			5	4	13	6	2	3	35	
Clark	Plants	19				6	6		5	8			5	2	2	1		2	1	47
	Employment	1				1			68				6			12	12	...	1	107
Clay	Plants	3	1		4	1		8	1				10			2	2	1	23	
	Employment															6	6	20		

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

INDIANA (continued)	COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, '54 Census																				
		Fam	To-bacco	Tex-tile Mill	Ap-parel	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-struments	Total	
Clinton	Plants	9	1	—	1	1	2	—	2	—	—	—	—	3	—	3	4	1	—	—	31	
	Employment	3	3	—	3	—	—	—	—	1	—	—	1	1	—	3	—	4	—	22		
Dearborn	Plants	15	—	—	5	2	1	4	1	—	—	—	—	3	2	1	4	—	1	—	40	
	Employment	24	—	—	1	5	6	—	—	—	—	—	4	—	8	—	—	18	—	—	63	
De Kalb	Plants	11	—	—	3	4	1	—	8	2	1	2	—	1	2	11	15	2	3	—	69	
	Employment	1	—	—	1	—	—	—	3	—	—	4	—	1	4	1	2	7	—	—	26	
Delaware	Plants	32	—	1	5	2	4	2	15	1	—	2	—	10	10	26	40	3	4	—	164	
	Employment	12	—	—	1	—	6	3	3	2	—	6	—	26	20	18	14	14	60	—	189	
Dubois	Plants	17	—	—	1	20	28	—	5	1	—	1	—	4	—	—	2	2	1	1	—	83
	Employment	2	—	—	—	4	24	—	1	—	—	—	—	10	—	—	—	1	—	—	—	37
Elkhart	Plants	49	—	—	8	13	21	6	20	5	—	10	—	11	11	47	46	7	33	2	317	
	Employment	10	—	—	4	6	15	10	1	13	—	11	—	4	20	12	16	23	1	—	170	
Fayette	Plants	5	—	—	—	—	2	—	1	1	—	—	—	2	—	6	4	1	—	—	24	
	Employment	—	—	—	—	—	1	—	—	—	—	—	—	15	15	15	26	—	—	—	60	
Floyd	Plants	13	—	1	3	17	5	—	7	4	—	—	2	2	3	7	4	1	—	—	69	
	Employment	1	—	—	—	11	21	8	—	2	—	—	—	—	—	1	1	—	—	—	50	
Grant	Plants	25	—	—	3	3	8	8	13	3	—	—	1	7	10	7	18	0	4	1	125	
	Employment	3	—	—	1	3	—	10	2	—	—	—	20	24	7	2	27	11	—	—	117	
Hamilton	Plants	9	—	—	—	5	2	1	4	—	1	—	1	1	4	6	2	2	1	—	39	
	Employment	2	—	—	—	—	—	—	1	—	15	—	—	4	—	—	—	—	—	—	26	
Henry	Plants	12	—	—	2	5	4	1	8	2	—	—	—	4	3	5	3	—	4	—	50	
	Employment	1	—	—	—	—	—	—	—	—	—	—	1	46	5	1	—	3	—	—	59	
Howard	Plants	18	—	1	2	1	—	10	1	—	—	—	32	32	28	—	48	27	—	—	175	
	Employment	1	—	—	—	—	2	—	—	—	—	—	—	5	11	18	9	3	3	—	88	
Huntington	Plants	16	—	—	2	4	3	—	10	3	—	1	—	7	1	7	6	6	—	—	68	
	Employment	2	—	—	—	5	8	3	3	1	—	2	—	5	5	4	4	5	—	—	42	
Jackson	Plants	9	—	1	1	13	2	1	3	3	—	1	—	4	8	17	11	3	4	—	47	
	Employment	1	—	—	1	1	2	—	1	—	—	2	—	3	7	2	11	—	—	—	40	
Jay	Plants	12	—	—	1	2	1	—	3	2	—	—	2	5	4	—	3	3	—	—	39	
	Employment	4	—	—	—	5	—	—	—	—	—	—	4	7	—	—	7	—	—	—	30	
Johnson	Plants	15	—	—	1	7	—	1	6	—	—	—	1	—	2	1	—	3	—	—	38	
	Employment	3	—	—	3	2	—	—	—	—	—	—	—	13	—	—	—	—	—	—	25	
Knox	Plants	16	—	—	6	—	4	—	6	1	—	1	2	6	1	2	1	2	1	—	49	
	Employment	2	—	—	—	—	—	—	4	—	—	—	3	6	1	—	4	—	—	—	23	
Kosciusko	Plants	14	—	2	4	13	6	1	12	2	—	1	—	4	8	17	11	3	4	—	108	
	Employment	1	—	—	—	—	—	—	1	—	—	—	3	7	2	11	—	2	3	—	33	
Lake	Plants	60	1	2	12	9	13	5	39	23	11	1	—	34	31	49	36	6	9	2	361	
	Employment	33	1	9	1	2	3	18	—	33	118	—	27	649	80	19	1	47	—	1,060		
La Porte	Plants	24	3	9	11	10	1	16	1	2	—	1	7	6	18	26	4	7	4	—	157	
	Employment	1	8	4	3	11	—	3	—	—	—	4	10	16	46	1	46	4	239	—	—	
Lawrence	Plants	8	—	—	2	9	1	—	3	1	—	—	10	—	17	24	9	2	5	—	46	
	Employment	—	—	—	—	—	—	—	—	—	—	—	—	17	24	9	—	1	—	—	59	
Madison	Plants	31	—	3	4	2	2	18	4	—	1	1	10	9	19	28	3	6	1	—	180	
	Employment	10	—	4	2	2	1	5	1	—	—	—	12	14	75	5	170	17	—	319		
Marion	Plants	127	4	34	32	41	21	101	63	8	7	2	29	29	142	239	36	38	12	1,102		
	Employment	109	7	16	7	11	23	54	84	3	24	—	11	44	78	131	167	304	3	1,091	—	
Miami	Plants	9	—	3	7	8	—	6	2	—	1	—	2	2	7	7	3	3	3	—	67	
	Employment	1	—	—	1	1	—	—	—	—	—	—	1	1	12	—	—	—	—	—	34	
Munroe	Plants	9	—	—	8	1	1	0	1	—	—	—	28	—	—	4	—	1	—	—	64	
	Employment	2	—	—	1	1	—	—	—	—	—	—	18	—	—	66	—	—	—	—	94	
Montgomery	Plants	9	—	2	4	—	—	7	—	—	—	—	7	2	3	3	—	—	—	—	39	
	Employment	1	—	—	1	—	—	—	16	—	—	—	—	1	5	3	—	—	—	—	29	
Noble	Plants	18	—	2	4	3	—	6	2	—	1	—	3	6	6	12	2	1	—	—	66	
	Employment	4	—	2	—	—	—	—	—	—	—	—	3	3	1	6	10	—	—	—	26	
Perry	Plants	7	—	1	1	10	5	—	1	—	—	—	2	—	—	—	—	1	1	—	29	
	Employment	—	—	—	—	—	14	—	—	—	—	—	3	—	—	9	8	—	—	—	36	
Porter	Plants	6	—	3	6	1	—	9	4	—	—	—	5	2	4	10	1	—	—	—	53	
	Employment	—	—	—	1	—	—	—	—	—	—	—	1	4	8	6	—	—	—	—	24	
Randolph	Plants	12	—	2	2	2	—	7	—	—	—	2	2	3	6	5	2	3	—	—	53	
	Employment	2	—	3	3	1	—	1	—	—	—	—	8	—	5	4	8	—	—	—	36	
St. Joseph	Plants	57	2	1	10	15	8	8	48	11	2	5	—	11	9	49	57	4	12	6	330	
	Employment	18	—	13	2	12	4	8	3	2	52	1	—	1	4	10	64	3	216	3	429	
Shelby	Plants	16	—	2	3	6	1	4	1	—	1	—	8	1	6	7	2	—	—	—	60	
	Employment	2	—	3	—	10	5	—	—	—	—	—	5	1	1	10	—	—	—	—	40	
Tippecanoe	Plants	21	—	2	2	3	2	12	4	—	1	—	3	1	7	4	2	1	1	—	68	
	Employment	2	—	1	—	20	2	4	2	—	8	1	2	1	14	3	16	26	1	9	111	
Vanderburgh	Plants	55	2	6	18	19	3	23	8	1	2	1	—	4	—	30	124	89	—	—	219	
	Employment	43	6	6	2	13	1	9	10	2	1	—	—	3	—	2	1	—	—	—	349	
Vermillion	Plants	7	—	3	2	—	1	3	2	—	—	—	—	3	—	2	1	—	—	—	25	
	Employment	—	—	2	—	1	7	8	10	3	—	—	—	1	8	8	1	10	—	—	103	
Vigo	Plants	44	1	6	11	6	3	20	10	2	1	—	10	9	8	12	2	2	1	1	158	
	Employment	28	—	2	2	1	7	8	10	3	—	2	—	1	8	8	1	10	—	—	103	
Wabash	Plants	7	—	—	6	5	3	9	1	—	—	—	6	4	2	13	3	1	2	66		
	Employment	—	—	1	4	9	5	2	—	18	—	7	1	—	3	2	—	1	—	1	55	

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

INDIANA
(continued)

COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment). NUMBER OF PLANTS, 1954 Census																				
	Fond	To-bacco	Tex-Bio Mill	Ap-parel	Lumber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-stru-ments	Total	
Wayne	Plants	13		5	7	3	1	11		1	1		5	9	14	29	3	7	125		
	Employment	3		2	1	2		2					3	10	10	90	18	8	148		
Total Above Counties	Plants	957	8	18	160	332	255	82	642	201	30	46	17	313	220	579	779	143	180	41	5,259
	Employment	380	10	36	135	85	200	93	166	270	127	168	13	241	961	562	692	817	1,032	19	6,161

IOWA

Black Hawk	Plants	37		1	5	6	3	1	20	4	1	1	5	9	12	25	2	3	1	143	
	Employment	66			9	1			4				1	2	4	73				166	
Cerro Gordo	Plants	22			2	2		1	9	5	1	1	6		7	1				60	
	Employment	21							1				10							37	
Clinton	Plants	18			2	0	2	2	11	3			5	3	5	4	1			64	
	Employment	17			3	5		1	2	11			2	4	4					54	
Des Moines	Plants	17			2	4	8	1	10	4	1		3	2	4	4	7	2		75	
	Employment	12			1	6		3	1				1	1	8	13				71	
Dubuque	Plants	37			4	13	3	3	16	8			4		8	9	1	1		113	
	Employment	31			3	10	2	4	2	2			7	17	11					105	
Jasper	Plants	8					2		8				1	2		6	1	1	1	36	
	Employment								1						30	6				43	
Lee	Plants	20			1	3		3	8	6	1	1	2	3	5	6				63	
	Employment	8						2	1	7			8	1	1					59	
Linn	Plants	48			1	7	4	3	33	11	1	1	7	3	27	39	7	5	2	196	
	Employment	53						1	3	8	2			13	48	45	7			186	
Marshall	Plants	19			1	2		1	5	2			2	6	4	10			1	54	
	Employment	4											4	1	20					34	
Muscatine	Plants	21			1	7	1		5	2			3	1	4	6				67	
	Employment	8				6	2		3				1	1						35	
Polk	Plants	74		5	12	8	15	6	77	27	2	4	8	24	6	41	36	3	10	1	386
	Employment	44		2	4	1	3	1	41	8		32	1	8	18	29		38		238	
Scott	Plants	36			7	8	6	1	20	8		1	1	9	10	18	34	1	1	166	
	Employment	25			2	2	1		4				4	30	2	38		4	17	134	
Wapello	Plants	18			1	2	2		8	1			3	3	3	9				51	
	Employment	35							1						24					63	
Webster	Plants	16			3	2		1	7	4			10	3	4	5	1	1		81	
	Employment	16							1	3			14			4				41	
Woodbury	Plants	44			7	4	9	2	26	7	1	2	7	2	7	11	3	5		146	
	Employment	59			2	1			8	1			1		7	10				94	
Total Above Counties	Plants	435		6	49	74	52	28	263	88	8	11	8	91	53	147	196	28	29	7	1,879
	Employment	404		2	29	41	18	17	82	40		37	7	43	53	55	306	88	92	19	1,368

MICHIGAN

Allegan	Plants	30		1	2	10	2	5	10	2			9	2	6	13	1	1		95	
	Employment	5			1			18	1					7	8				40		
Alpena	Plants	7			2	9	3	1	6	1			6	1		5		1		41	
	Employment	3			1	1		6		2			12			9				36	
Barry	Plants	7			6	2			5				3	2	5	5	1			37	
	Employment	1				1							3	2	18					26	
Bay	Plants	37	1	1	3	10	10	1	13	4	1		10	10	17	17	7	8		157	
	Employment	6			2	3	5		2				3	15	3	18	9	45		119	
Benton	Plants	42			6	12	6	11	33	3	1	3	14	22	45	55	9	11	1	293	
	Employment	14			2	2	2	19	10			3	1	34	17	61	20	31		210	
Branch	Plants	10	1	1	4	2			7	1			1	1	4	6	10	3	3		63
	Employment	1							2				2	8	3	2				30	
Calhoun	Plants	49			3	12	5	8	30	5			9	9	21	23	7	6	4	197	
	Employment	70			1	1		9	5	1			14	13	40	55	1	60		272	
Cass	Plants	8			6			3					3	2	6	13	2	5		53	
	Employment													6	3	8				21	
Delta	Plants	19			1	84	1	2	4				6	1	2	2	1			124	
	Employment	1				8		8	1					7						26	
Dickinson	Plants	11			1	51	6	1	4	2			2	1		1	1	1		85	
	Employment	1			3	2	3						2				2	2		21	
Eaton	Plants	12			2	9	2		7	1			7	4	8	8	2	1		66	
	Employment	1			2	2	1						2	3	1	1	4			20	
Genesee	Plants	51	1	4	11	8	1	37	13			1	20	8	31	66	3	18	2	296	
	Employment	10	2	2	1	1	2	9	6			1	3	95	8	122	532			815	
Grand Traverse	Plants	18			2	8	1		5				3	1	10	2	2			56	
	Employment	3												14						27	
Gratiot	Plants	14			1			8	1	2			1	3	1	7	1	7		44	
	Employment	1											1		1	2	16			34	
Hillsdale	Plants	10			3	7			7				3	1	3	5	1	8		66	
	Employment	2			1								3	3	8	3	2	2		22	
Huron	Plants	17			4			5	1				9	9	4	1	1			82	
	Employment	4			3				5				6							20	

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

MICHIGAN (continued)	COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment)—NUMBER OF PLANTS, 1954 Census																			
		Food	Tobacco	Textile Mill	Ap-parel	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rub-ber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments	Total
Ingham	Plants	38	—	1	2	3	4	—	35	9	1	—	—	8	12	35	38	3	8	3	208
Ingham	Employment	10	—	—	—	—	—	—	10	2	—	—	—	1	19	8	18	—	208	1	281
Ionia	Plants	19	—	1	3	8	2	1	10	—	—	—	—	4	2	5	8	1	4	—	68
Ionia	Employment	3	—	—	—	—	—	—	—	—	—	—	—	2	1	3	2	22	—	3	38
Jackson	Plants	28	—	—	6	7	2	2	20	6	2	1	14	14	48	67	3	27	3	265	
Jackson	Employment	4	—	—	4	—	1	—	2	—	1	12	—	6	8	16	28	8	61	1	157
Kalamazoo	Plants	38	1	1	6	8	3	28	33	18	2	2	—	9	12	27	41	3	16	3	267
Kalamazoo	Employment	10	—	—	4	—	1	90	9	31	—	1	—	2	3	12	16	7	23	—	239
Kent	Plants	130	1	7	20	51	91	15	101	24	1	6	4	26	31	106	91	12	19	3	776
Kent	Employment	40	—	8	1	13	78	14	22	8	—	6	4	7	19	87	59	10	103	28	823
Lenawee	Plants	26	—	2	1	12	5	3	14	5	—	3	—	12	6	25	35	3	4	1	163
Lenawee	Employment	4	—	1	—	—	6	2	1	—	—	—	1	2	4	10	61	2	7	—	116
Macomb	Plants	23	—	2	8	23	13	6	22	10	2	3	1	17	20	166	344	12	34	3	746
Macomb	Employment	3	—	—	2	2	1	1	1	—	—	—	—	6	10	65	62	8	121	—	351
Manistee	Plants	10	—	—	2	9	5	3	3	4	—	—	1	2	1	1	2	—	2	—	48
Manistee	Employment	—	—	4	—	1	3	—	8	—	—	—	1	—	1	1	—	1	—	1	23
Marquette	Plants	17	—	—	4	101	—	—	8	2	—	—	—	—	2	1	3	—	—	1	139
Marquette	Employment	2	—	—	6	10	—	—	1	4	—	—	—	—	2	2	—	—	2	—	26
Menominee	Plants	17	—	—	1	59	6	3	5	—	—	—	—	2	1	2	4	4	1	—	107
Menominee	Employment	2	—	—	—	6	8	4	1	—	—	—	—	2	4	—	—	2	4	—	31
Midland	Plants	5	—	—	5	2	—	7	4	1	—	—	3	3	1	—	1	—	1	—	37
Midland	Employment	—	—	—	—	—	—	1	103	—	—	—	—	2	—	—	—	—	—	1	110
Monroe	Plants	13	—	2	1	4	2	12	7	1	—	—	9	6	13	18	2	2	1	100	
Monroe	Employment	3	—	—	—	1	38	1	—	—	—	—	1	4	3	8	—	31	—	88	
Montcalm	Plants	18	—	—	2	10	3	—	7	—	1	—	1	1	—	5	7	—	—	—	54
Montcalm	Employment	2	—	—	—	—	—	—	—	—	—	—	1	—	4	23	—	—	—	—	34
Muskegon	Plants	35	—	—	2	18	7	3	17	5	3	2	4	18	22	46	1	9	—	107	
Muskegon	Employment	5	—	—	—	18	6	4	1	2	—	1	43	8	138	—	8	—	—	252	
Oakland	Plants	51	—	1	11	31	26	5	60	28	1	5	2	33	33	205	417	28	51	8	1,051
Oakland	Employment	6	—	1	2	4	2	3	8	7	—	10	—	4	23	55	113	8	314	1	576
Ottawa	Plants	48	—	1	8	22	26	2	13	8	—	1	3	7	4	33	29	7	10	3	227
Ottawa	Employment	12	—	—	2	2	14	—	1	4	—	—	8	—	28	17	3	3	13	—	116
Saginaw	Plants	50	—	—	6	15	7	4	23	10	—	1	1	18	8	17	47	—	14	1	228
Saginaw	Employment	18	—	—	1	1	2	1	3	2	—	—	1	88	7	49	—	80	—	263	
St. Clair	Plants	31	—	1	6	7	7	2	13	4	1	2	—	10	7	16	34	—	12	1	164
St. Clair	Employment	4	—	3	2	—	—	4	2	6	—	2	—	8	15	2	26	—	24	—	101
St. Joseph	Plants	17	—	2	2	3	7	13	12	1	—	1	4	7	14	23	2	5	2	121	
St. Joseph	Employment	3	—	2	—	18	10	3	—	—	—	—	2	5	11	1	3	1	3	1	66
Shiawasse	Plants	15	—	—	1	4	5	1	8	—	—	—	—	7	3	13	8	5	2	—	78
Shiawasse	Employment	1	—	—	—	3	—	1	—	—	—	—	3	1	1	2	20	—	—	36	
Van Buren	Plants	31	—	—	2	10	—	—	10	2	—	—	—	2	6	7	14	2	—	1	93
Van Buren	Employment	4	—	—	—	3	—	—	—	—	—	—	—	8	3	5	—	3	—	32	
Washtenaw	Plants	21	—	—	—	5	2	2	34	4	—	1	—	13	7	27	36	8	13	11	194
Washtenaw	Employment	6	—	—	—	—	—	3	6	—	—	—	2	4	11	22	23	29	6	33	211
Wayne	Plants	411	8	17	182	98	114	43	506	189	38	20	13	142	201	728	1,148	89	194	48	4,362
Wayne	Employment	228	8	11	47	19	24	46	142	189	27	78	10	82	423	413	745	85	1,862	13	4,467
Wexford	Plants	6	—	1	3	6	1	—	4	—	—	1	—	3	3	—	5	2	3	—	38
Wexford	Employment	—	—	—	1	2	1	—	—	—	—	4	—	3	—	—	—	5	—	5	20
Total Above Counties	Plants	1,432	9	48	271	787	388	175	1,182	388	54	50	31	456	470	1,678	2,710	228	806	90	11,435
Total Above Counties	Employment	501	8	35	97	101	204	287	264	380	38	119	34	107	777	928	1,641	327	3,711	83	8,913

MINNESOTA

Anoka	Plants	3	—	—	—	3	3	—	4	3	—	—	2	3	6	9	1	4	1	44	
Blue Earth	Plants	23	—	—	1	5	2	1	11	3	—	—	8	1	5	1	5	1	5	—	60
Carlton	Plants	4	—	—	—	—	—	—	2	3	—	—	1	—	4	—	4	—	—	23	
Dakota	Plants	6	—	—	—	11	1	4	5	—	1	—	4	—	—	—	—	—	—	33	
Dakota	Employment	13	—	—	—	3	2	2	5	5	1	—	9	3	2	3	—	2	—	51	
Freeborn	Plants	73	—	—	—	—	—	1	2	—	—	—	2	1	1	10	—	1	—	63	
Freeborn	Employment	20	—	—	—	2	—	—	—	—	—	—	1	—	11	—	—	2	—	37	
Goodhue	Plants	23	—	1	2	4	—	—	8	2	—	1	5	8	—	2	2	1	—	87	
Goodhue	Employment	5	—	—	—	1	—	—	1	1	—	—	9	4	—	—	—	—	—	23	
Hennepin	Plants	175	—	8	112	85	87	29	282	72	9	15	13	45	34	169	234	49	26	31	1,811
Hennepin	Employment	108	—	19	51	14	13	16	65	29	3	7	4	5	12	46	109	34	16	141	717
Koochiching	Plants	6	—	—	—	71	—	4	2	—	—	—	4	—	—	—	—	—	—	—	62
Mower	Plants	14	—	—	—	—	2	—	1	8	—	—	4	—	—	—	—	—	1	—	28
Mower	Employment	55	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	1	—	56
Ramsey	Plants	73	—	8	41	26	23	20	110	53	9	4	8	23	14	86	73	18	16	8	640
Ramsey	Employment	46	—	3	22	8	8	74	94	16	4	1	8	8	26	61	17	42	—	540	
St. Louis	Plants	59	1	2	10	108	5	5	55	4	3	1	1	16	9	9	12	2	6	1	382
St. Louis	Employment	18	—	1	2	11	1	1	7	1	4	—	4	32	7	16	6	1	—	119	

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

MINNESOTA
(continued)

COUNTY	EMPLOYMENT, 1966, in hundreds (Counties with 2,000 or over total industrial employment/NUMBER OF PLANTS, 1954 Census)																				
	Food	To-bacco	Tex-tile Mill	Ap-parel	Lumber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments	Total	
Stearns	Plants	35			1	6	1		20	1				21	1	1	16		2	108	
	Employment	4							1					3			20			31	
Washington	Plants	9			1	8	3	1	5	3	1	1				3	7	1		44	
	Employment	8				4				3	2		2			2	1			26	
Winona	Plants	33		3	2	3	1	2	10	7			2	6	4	7	9	1	2	96	
	Employment	11		4	1				2					1	4	5				37	
Total Above Counties	Plants	498	1	20	171	371	108	68	400	168	24	22	30	146	70	273	376	78	53	46	3,203
	Employment	388		28	78	49	24	140	178	57	20	8	17	28	68	93	227	63	61	143	1,819

MISSOURI

Audrain	Plants	11			3	2			6	1				3	7						33
	Employment				3				1					4	23						34
Buchanan	Plants	45		1	7	7	1	4	16	11		1		6	3	7	8	3	1	1	124
	Employment	68			10	1		12	4	8					3		4				112
Cape Girardeau	Plants	18	2	2	10	5		8		1		1	2	7	2	2	3	4		1	70
	Employment	3	2	2	1			1					14	4			2				34
Clay	Plants	12	1	3	6	6	7	9	18	4	1		5	4	10	7	3	4		103	
	Employment	18			1		1	6	2	10	1			10	6	1	7	1	2	49	110
Franklin	Plants	11	2	2	10	2	1	8									1	9		1	99
	Employment	1	1	1	1		1										3			1	46
Greene	Plants	62		10	18	9	3	29	2		2		9	3	9	8	1	7	1	108	
	Employment	24		2	4	3	9	6					2		2		7			57	
Jackson	Plants	127	3	132	27	52	23	224	78	5	4	8	37	31	128	104	39	28	17	1,146	
	Employment	81		63	5	9	10	76	16	21		8	7	50	46	30	41	113	4	681	
Jasper	Plants	37	2	5	12	6	1	15	10	1	1	2	9	6	9	16	2	5		146	
	Employment	7		16	4	1		3	14			2	5	1	4	4		6		75	
Jefferson	Plants	6		1	3			6					1	6	1	3	3	1		33	
	Employment							1					7	20	4					38	
Marien	Plants	15		1	9		1	7	1		1	3	1				2			41	
	Employment	2			1			1			5	12					1			25	
Pettis	Plants	15		2	2			6	1		1	2				1		1		32	
	Employment	2			4			1	3			4	3							21	
St. Charles	Plants	9		1	1	1	1	4	1				2	1	3	2		2		29	
	Employment	1																18		23	
St. Louis	Plants	302	8	22	273	80	102	70	403	201	28	11	84	96	54	313	311	53	39	34	2,649
	Employment	240	7	23	130	14	51	64	118	126	12	3	90	46	55	178	180	156	250	22	1,937
Scott	Plants	8		3	1	1		11	1			2	1		1						32
	Employment	3			8			1				6									21
Total Above Counties	Plants	677	10	31	445	185	187	111	752	325	38	22	116	193	105	488	471	106	88	85	4,687
	Employment	456	8	29	273	36	68	112	220	177	38	9	100	120	123	241	226	208	447	28	3,227

OHIO

Allen	Plants	31	3	1	3	5	2		15	7	2	2		6	4	18	21	6	6	1	136
	Employment	9	11	3					2		7	2		7	7	25	31	21			136
Ashland	Plants	14		1	2	1			10	1	2	6		4	3	1	3	1	2		54
	Employment	2			1				6	1		13		2	5	8		7			51
Ashatabula	Plants	26	3	3	38	2	3	11	5	5	6	6	5	5	17	14	8	6	1	166	
	Employment	2			1	2		2	1	4		2	6	1	22	11	2	15	5		87
Auglaize	Plants	18	3	1	4	1	1	9	1		4		2	2	7	1	1			59	
	Employment	2	1		1		1						3	3	8	1				50	
Belmont	Plants	24		5	8			10	2				12	4	8	6	1			86	
	Employment	3		5	1			1					7	1	19	4				44	
Butler	Plants	29	2	2	3	2	10	23	4	3	1		8	13	24	32	1	10	1	182	
	Employment	10	4	1	1	1	77	5		2		2	73	38	43	1	71				338
Clark	Plants	24		6	7	3	3	20	5		1	3	11	7	28	66	2	7	3	201	
	Employment	4		1		1	1	27				2	2	8	18	33	18	41	3	188	
Clinton	Plants	10		1	4	1		4		1	1	1	1	5	10	11	1	1		58	
	Employment							1					2	10	4					26	
Columbiana	Plants	20		1	14	8	4	20	7	1			40	10	16	40	1	2	1	186	
	Employment	1				11	2	3					38	2	23	33					118
Coshocton	Plants	10	2	3	18	1	4	14	2		2	3	4	2	4	4	1			78	
	Employment	1		1		1	5					2	4	3	7					38	
Crawford	Plants	12	1	4	5	3		8		2	2		6	0	0	24	8	3		91	
	Employment				6							1	1	21	17	11				69	
Cuyahoga	Plants	287	2	33	160	53	112	48	440	221	38	13	11	96	187	622	777	129	103	53	3,583
	Employment	180	49	96	10	44	45	134	96	38	10	1	36	443	373	466	238	588	33	2,840	
Darke	Plants	21	3	1	2	3		1	5	2			10	4	1	7		2		65	
	Employment	4		2									1	1	1		4			20	
Defiance	Plants	17				1	2		6	1	1		2	1	14	7	3	3		66	
	Employment	4							4				2	20	10	1	4	6		52	
Delaware	Plants	8		1	4							1	2	2	8		2	2		35	
	Employment	1			1							1	1	1	1	7	4			20	

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

OHIO (continued)	COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment; NUMBER OF PLANTS, 1954 Census)																			
		Food	Tobacco	Textile Mill	Ap- parel	Lumber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem- ical	Petr. and Coal	Rub- ber	Leath- er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments	Total
Erie.....	Plants	38	—	—	1	7	2	9	11	3	1	2	—	7	6	13	17	1	5	—	129
..... Employment		7	—	—	—	—	—	7	1	2	—	3	—	3	10	5	38	13	2	—	103
Fairfield.....	Plants	18	—	—	—	8	—	3	6	—	1	—	1	12	1	7	11	4	1	2	78
..... Employment		2	—	—	—	—	—	4	2	—	—	—	4	46	—	1	8	5	—	—	77
Franklin.....	Plants	123	3	32	25	36	16	118	47	5	8	17	47	23	93	109	8	21	14	792	
..... Employment		86	12	9	4	10	13	43	19	1	1	21	36	26	120	153	9	170	15	788	
Fulton.....	Plants	15	—	—	—	7	8	—	9	1	—	—	—	4	3	6	6	1	3	—	64
..... Employment		6	—	—	—	—	2	—	—	—	—	—	—	1	1	2	3	—	—	—	21
Greene.....	Plants	12	—	4	—	4	2	—	10	2	—	1	1	5	3	1	5	2	1	1	54
..... Employment		1	—	2	—	1	—	—	1	—	—	1	—	6	2	—	4	—	—	—	23
Guernsey.....	Plants	12	—	—	1	10	3	1	6	2	—	—	—	6	1	2	5	3	—	—	63
..... Employment		—	—	—	—	—	—	—	—	—	—	—	—	12	1	2	8	—	—	—	31
Hamilton.....	Plants	233	2	14	105	41	63	47	277	99	7	9	26	81	44	195	222	37	24	28	1,000
..... Employment		178	1	16	67	10	37	58	119	125	21	2	10	17	31	145	213	77	230	14	1,501
Hancock.....	Plants	19	1	—	4	4	1	—	9	5	3	2	1	10	3	4	13	1	—	1	82
..... Employment		5	1	—	12	—	—	—	1	1	2	19	—	2	1	1	8	2	—	—	61
Highland.....	Plants	6	—	1	2	7	2	—	8	—	—	—	1	1	2	3	1	1	—	1	34
..... Employment		—	—	3	4	—	—	—	—	—	—	—	0	—	—	—	1	1	—	1	20
Huron.....	Plants	17	—	2	4	4	4	1	13	4	—	4	—	6	3	5	—	1	3	—	68
..... Employment		4	—	—	2	—	—	—	1	—	—	6	1	1	2	—	4	—	1	—	31
Jackson.....	Plants	9	—	—	2	11	1	—	4	2	—	1	—	10	7	1	2	—	—	—	51
..... Employment		1	—	—	3	—	1	—	—	—	—	—	—	8	8	2	—	—	—	—	20
Jefferson.....	Plants	24	—	—	1	8	1	4	7	4	—	—	1	16	6	6	2	2	—	—	83
..... Employment		1	—	—	—	—	—	4	1	—	—	—	10	91	4	—	—	—	—	—	116
Knox.....	Plants	7	—	—	1	11	—	1	7	4	1	—	—	2	—	3	15	—	—	—	37
..... Employment		—	—	—	—	—	—	—	—	—	—	—	—	12	—	3	16	—	—	—	43
Lake.....	Plants	9	3	1	7	3	1	15	17	1	5	—	6	4	24	47	3	7	2	161	
..... Employment		9	—	—	—	—	—	—	3	3	1	17	—	1	4	17	1	5	—	127	
Lawrence.....	Plants	7	—	—	—	8	—	—	3	3	1	1	10	3	3	3	—	1	—	—	44
..... Employment		—	—	—	—	—	—	—	15	2	2	—	10	9	—	1	—	—	—	—	46
Licking.....	Plants	17	1	—	2	14	1	2	9	3	3	2	—	11	3	11	5	2	1	1	97
..... Employment		3	—	—	—	—	—	5	1	—	3	—	36	15	6	1	12	10	—	101	
Lorain.....	Plants	44	2	2	5	2	1	20	9	1	—	—	10	18	82	38	7	9	1	236	
..... Employment		6	1	3	—	—	—	4	6	4	—	1	129	48	24	17	68	—	—	327	
Lucas.....	Plants	83	2	3	22	23	17	15	87	41	8	8	1	33	31	106	131	17	26	10	711
..... Employment		46	1	10	7	10	8	12	28	15	27	2	—	26	62	66	93	83	109	3	664
Mahoning.....	Plants	60	—	—	8	11	12	3	27	7	3	5	2	33	30	82	33	7	7	4	332
..... Employment		10	—	—	3	1	42	1	7	1	11	11	—	21	287	49	27	11	13	—	516
Marien.....	Plants	16	—	1	4	—	—	6	5	1	3	—	4	10	3	14	—	4	—	—	72
..... Employment		3	—	—	1	—	—	1	3	2	—	1	—	12	1	38	—	3	—	—	67
Medina.....	Plants	12	—	1	7	—	—	7	1	1	1	—	7	4	9	14	1	1	—	70	
..... Employment		3	—	—	2	—	—	—	—	9	—	—	4	4	8	8	—	—	—	—	44
Mercer.....	Plants	13	—	3	6	5	—	7	4	1	—	—	3	1	2	9	—	—	1	—	84
..... Employment		3	—	2	—	6	—	2	—	—	—	—	—	—	11	—	—	—	—	—	28
Miami.....	Plants	30	3	1	7	3	7	10	2	—	—	—	7	8	10	24	4	6	—	127	
..... Employment		12	11	8	4	6	1	—	—	—	—	—	1	2	3	20	14	7	—	96	
Montgomery.....	Plants	78	2	13	21	18	19	86	35	8	7	—	24	32	76	195	20	27	12	716	
..... Employment		44	—	2	3	2	29	87	14	2	77	—	8	30	15	436	130	86	1	980	
Muskingum.....	Plants	20	1	2	14	2	3	7	1	—	—	—	26	8	4	8	3	—	1	104	
..... Employment		7	1	1	—	—	2	1	—	—	—	—	47	13	3	6	21	—	—	—	100
Ottawa.....	Plants	18	—	—	4	1	1	6	2	—	1	1	11	2	3	12	1	4	1	68	
..... Employment		2	—	—	—	—	1	1	—	—	—	—	6	—	3	3	—	—	—	34	
Pickaway.....	Plants	16	—	1	1	—	—	1	5	1	—	—	—	—	1	1	1	1	—	—	31
..... Employment		5	—	—	—	—	2	—	3	—	—	—	—	—	4	—	—	—	7	—	20
Pike.....	Plants	2	—	—	—	10	—	—	2	1	—	—	2	—	—	1	1	—	—	—	30
..... Employment		—	—	—	—	—	—	—	26	—	—	—	—	—	—	—	—	—	—	111	
Portage.....	Plants	11	3	1	8	6	—	8	3	—	8	—	8	2	11	26	1	3	—	—	86
..... Employment		6	—	—	2	—	—	1	1	—	12	—	4	7	6	12	10	8	—	163	
Ritchland.....	Plants	31	1	3	10	6	3	17	6	—	2	—	11	7	25	21	9	4	6	—	194
..... Employment		3	1	—	1	2	1	7	—	—	24	—	2	23	27	98	26	6	6	—	43
Ross.....	Plants	9	—	1	12	2	4	5	2	1	—	—	6	—	1	4	—	3	—	—	22
..... Employment		1	—	—	—	—	29	1	—	—	—	—	6	—	3	—	—	—	—	—	42
Sandusky.....	Plants	22	—	4	3	—	2	8	4	—	2	—	13	4	16	14	6	1	2	107	
..... Employment		6	—	5	—	—	—	2	—	4	—	12	9	6	6	19	12	—	—	81	
Scioto.....	Plants	18	1	—	21	—	1	4	2	1	—	4	12	4	1	4	—	2	—	—	78
..... Employment		4	1	—	3	—	—	1	—	1	—	32	7	41	—	—	—	—	—	—	96
Seneca.....	Plants	13	—	1	7	3	1	10	3	2	1	—	13	8	5	10	7	2	1	—	96
..... Employment		2	—	—	—	—	—	2	—	—	—	—	16	4	2	14	28	1	—	78	
Shelby.....	Plants	9	1	1	4	—	—	4	—	2	1	1	3	8	5	15	—	5	—	60	
..... Employment		1	—	—	—	—	—	—	—	—	—	—	6	13	27	—	1	—	—	53	
Stark.....	Plants	87	2	10	11	10	8	49	19	8	9	—	35	35	81	78	8	4	3	456	
..... Employment		20	2	2	2	23	5	13	2	8	16	—	33	222	86	144	4	3	2	597	
Summit.....	Plants	73	2	13	10	10	13	81	22	1	47	2	30	23	81	171	13	11	9	669	
..... Employment		32	—	2	6	2	7	14	26	—	496	—	17	10	86	66	2	98	3	883	
Trumbull.....	Plants	26	—	3	26	8	—	19	6	2	1	1	20	25	82	35	10	7	3	246	
..... Employment		4	—	—	1	—	—	4	—	2	3	6	28	86	10	28	42	—	—	407	

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Industrial Potentials by Counties—(Cont'd)

OHIO
(continued)

COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census																			
	Food	To-bacco	Tex-tile Mill	Ap-parel	Lumber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Pabi.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fahr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-stru-ments	Total
Tuscarawas	Plants	28	1	1	3	18	3	1	12	2	1	1	1	38	5	11	20	3	2	155
	Employment	2				1		3	1	2				40	8	17	12	2		95
Van Wert	Plants	11	1		1	2	1	1	4	2			5		8	5				38
	Employment	2	1		2			6						10	3	11	8	1		23
Washington	Plants	7				18	2		6	10	1	1	2	8	2	3	3		1	66
	Employment	1				1	5		1	9				3	17	4	2			49
Wayne	Plants	29			1	9	3	5	9	4		3		10	3	11	8	1	8	111
	Employment	7			2	1	19	1	4		7		4	5	10	2		10	1	83
Williams	Plants	21			2	8	4		8	2	1			4	2	7	5	1	5	71
	Employment	3				2								2		11		7		33
Weed	Plants	28				5			8	6	1	3		14	3	8	15	2	1	93
	Employment	9									1		66	1	3	1				86
Total Above Counties	Plants	1,921	16	96	446	630	379	257	1,635	655	110	178	88	797	635	1,788	2,392	350	352	168,13,669
	Employment	782	19	146	260	95	221	362	566	485	137	783	112	648	1,929	1,365	2,182	871	1,664	94,13,073

WISCONSIN

Brown	Plants	27	1	1	6	16	8	19	27	13	1	1	5	11	5	9	22	1	1	241	
	Employment	26			1	1	3	43	7				3	2	4	2	16			117	
Chippewa	Plants	30	1	1	15	1	2	9	2				3	5	3	2	3		1	81	
	Employment	6	1	1	2		7	1					4	2				2		30	
Columbia	Plants	31	1	1	6	1		12					3	1	1	8	3			67	
	Employment	10	2	3	1			1					4							23	
Dane	Plants	80	1	1	6	12	7	1	64	11		2	1	9	8	24	25	4	6	261	
	Employment	84	1			2	2	9	5				4	3	4	21	9	4	4	129	
Dodge	Plants	83	1			3	1	1	14	2	1		4	7	4	15	9	1	2	181	
	Employment	13											10	2	10	10	1			53	
Eau Claire	Plants	29				5	1	5	9	4		1		3	3	8		3		77	
	Employment	8				6	2			34						10				66	
Fond Du Lac	Plants	68	2	5	8	1	1	19	2				4	9	3	8	14	4		142	
	Employment	10	4	4				1					6		3	30	3			72	
Jefferson	Plants	33	20	6	4	7	7		18	2		1	4	1	1	8	13	3	2	111	
	Employment	14	1	1	4	4		2					7		8	16				64	
Kenosha	Plants	21	2	4	3	5		11	5				7	7	15	27	2	4		116	
	Employment	2	10					37	3				21	9	11	1	92			192	
Keweenaw	Plants	29	1	1	6	3			3	1				3	2		1			49	
	Employment	2	2		9	1								2	1		2			21	
La Crosse	Plants	35	1	4	8	2	2	13	1	1	2	1	8	2	8	18		6	1	113	
	Employment	9		1	1			2	1		8		1		40	14		1	14	99	
Lincoln	Plants	17	2	2	26	2	4	4	1			1	2	1	1	2	2		1	68	
	Employment	2		2	8	1	6						1							24	
Manitowoc	Plants	66	3	7	8	4	5	18	4		1		9	9	14	20	5	3	1	178	
	Employment	8		2	2	20	1	1					2	37	16	4	9			114	
Marathon	Plants	62		1	33	1	8	10	2		1	2	11	2	8	9	3	3		179	
	Employment	6			16		29	1			1	3	4	4	9	16	2			96	
Marinette	Plants	18	1	3	48	2	8	4	1			1	5		2	5		3		102	
	Employment	2	1		8			18									1			39	
Milwaukee	Plants	204	9	27	111	90	44	40	264	106	8	10	82	72	89	231	406	64	27	24,1,879	
	Employment	212	1	18	39	11	12	45	103	28	6	1	63	11	174	147	507	75	60	20,1,864	
Oneida	Plants	7				30		4	5					6		1		1		55	
	Employment	1				8		12	1					2	12	13	3	2		21	
Ozaukee	Plants	60	8	1	13	6	22	15	2				6	2	8	2	10	5		172	
	Employment	12	11		2	1	50	3					6	2	8	15	4			111	
Pere Marquette	Plants	21	2	3	1	5	1	5	2			2	5	3	9	6	15	4		85	
	Employment	5	1		2								4	5	1	12	3			41	
Portage	Plants	19			13	6	4	4	1				1		1	2		1		57	
	Employment	3			2	3	8	1												24	
Racine	Plants	27	1	8	4	4	3	21	4			4	9	12	23	50	88	22	4	5	303
	Employment	8	4	8				19	8			1	6		25	30	78	20	7		242
Rock	Plants	24	1	3	8	4	2	4	21	1		1	2	2	2	8	26	5	7	1	124
	Employment	3	3		3			3					14		65	18	58	1	1	181	
Sauk	Plants	27	4	2	13	1		8	2				3	1	7	6	1	1		77	
	Employment	4	2		1				27							3				42	
Shawano	Plants	46		3	48		1	7					1							104	
	Employment	8			12		1	1												20	
Sheboygan	Plants	77	2	7	18	21	8	17	6	2	1	9	9	11	13	23	2	1		238	
	Employment	10	3	2	5	15	5	2	2				14	6	2	32	4	3	4		122
Walworth	Plants	12	1	1	3	2		10	3				4	6	4	15	8	4	1	87	
	Employment	3	1					1					1	1	2	1	5	2	1	32	
Washington	Plants	31		1	8	1	1	3	2				5	4	1	8	14	1	4	83	
	Employment	7											7		20	7		4		52	
Waukesha	Plants	26	1	1	10	10	4	9	10	1	1	1	3	27	18	32	60	8		243	
	Employment	7	1	1	1	1	1	1					2	1	18	8	37	1	1	91	
Waupaca	Plants	49	1	2	21	8	2	9					7	1	4	9	1	3		115	
	Employment	6	1	8												4				22	

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Industrial Potentials by Counties—(Cont'd)

WISCONSIN (continued)	COUNTY	SM EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over Industrial total employment) NUMBER OF PLANTS, 1954 Census																			
		Food	To-bacco	Tex-tile Mill	Ap- parel	Lum- ber (exc. furn.)	Furn. and Fixt.	Paper	Print's and Publ.	Chem- ical	Petr. and Coal	Rub- ber	Leath- er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru- ments	Total
		Plants	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winnebago.....	Plants	67	.....	5	5	12	8	22	32	6	2	1	3	7	8	18	27	8	4	4	240
.....	Employment	4	.....	8	8	17	4	75	12	2	1	3	11	3	8	2	17	.....	.....	.....	101
Weber.....	Plants	47	.....	.....	2	15	4	9	7	2	.....	1	5	1	4	7	1	2	.....	.....	112
.....	Employment	4	.....	.....	1	14	.....	44	1	.....	4	.....	8	1	.....	3	.....	.....	.....	.....	87
Total Above Counties.....	Plants	1,377	34	73	107	464	162	179	660	197	17	29	133	286	211	528	897	146	93	51	8,010
.....	Employment	482	2	78	78	145	115	350	190	83	9	50	108	43	287	386	698	400	294	87	4,296

NORTHWEST STATES

COLORADO

Adams.....	Plants	12	5	2	1	5	3	7	1	3	1	3	4	49
.....	Employment	7	2	4	2	2	2	2	2	2	23
Arapahoe.....	Plants	4	1	7	4	1	7	1	3	1	3	2	8	11	2	81
.....	Employment	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	8	.....	.....	.....	.....	.....	26
Denver.....	Plants	157	4	53	21	55	15	163	58	4	4	14	37	24	79	82	15	8	21	890	
.....	Employment	99	1	16	5	7	5	39	9	2	49	18	11	6	18	26	2	3	8	334	
El Paso.....	Plants	31	.....	3	12	7	1	22	3	1	1	11	2	9	9	2	2	1	1	123
.....	Employment	8	.....	.....	.....	.....	.....	7	.....	.....	.....	1	2	4	1	1	2	1	1	27
Jefferson.....	Plants	10	.....	2	6	2	.....	13	3	.....	1	1	7	7	2	.....	1	1	1	60
.....	Employment	5	.....	.....	.....	.....	.....	11	.....	.....	3	.....	.....	3	.....	.....	.....	.....	.....	23
Pueblo.....	Plants	30	.....	1	8	2	.....	11	4	1	.....	1	4	4	11	4	1	2	1	86
.....	Employment	6	.....	.....	.....	.....	.....	2	.....	3	.....	1	66	1	2	.....	.....	.....	.....	86
Total Above Counties.....	Plants	244	4	80	59	72	18	221	72	13	8	10	65	33	117	112	17	14	29	1,272	
.....	Employment	118	1	17	11	8	6	30	28	9	49	10	18	78	24	41	7	6	0	523	

IDAHO

Ada.....	Plants	34	.....	.....	2	19	4	.....	14	4	.....	1	7	1	11	7	.....	4	2	11
.....	Employment	5	.....	.....	4	.....	.....	.....	3	.....	.....	1	1	1	2	2	.....	.....	.....	2
Canyon.....	Plants	27	.....	6	1	.....	8	2	.....	.....	.....	6	3	2	1	.....	.....	.....	.....	8
.....	Employment	19	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Nez Perce.....	Plants	10	.....	2	16	.....	2	2	1	.....	.....	2	1	.....	.....	.....	.....	.....	.....	3
.....	Employment	2	.....	22	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Total Above Counties.....	Plants	71	.....	4	41	5	2	24	7	.....	1	14	2	14	9	1	4	2	212	
.....	Employment	27	.....	27	7	4	.....	.....	.....	.....	2	1	2	1	2	.....	.....	.....	.....	81

KANSAS

Atchison.....	Plants	10	.....	.....	2	2	.....	3	1	.....	.....	1	1	2	3	1	1	1	1	29
.....	Employment	8	.....	.....	4	.....	.....	3	.....	.....	.....	1	1	1	1	1	1	1	1	24
Cowley.....	Plants	19	.....	1	2	.....	8	1	1	.....	.....	4	.....	8	2	1	1	1	1	42
.....	Employment	9	.....	.....	1	.....	.....	1	.....	.....	.....	1	1	1	1	1	1	1	1	20
Johnson.....	Plants	7	.....	1	1	1	.....	15	4	2	.....	2	2	4	6	1	1	1	1	49
.....	Employment	1	.....	2	1	.....	1	.....	1	1	.....	1	1	1	1	1	1	1	1	82
Lambette.....	Plants	12	.....	3	3	1	.....	10	1	.....	.....	1	1	1	1	1	1	1	1	33
.....	Employment	1	.....	2	1	.....	1	.....	1	1	.....	1	1	1	1	1	1	1	1	21
Montgomery.....	Plants	22	.....	2	6	2	.....	10	3	3	.....	6	8	4	9	1	1	1	1	76
.....	Employment	8	.....	2	1	.....	2	1	1	4	.....	6	3	3	9	1	1	1	1	66
Reno.....	Plants	35	.....	3	2	1	3	14	7	2	1	4	2	1	8	11	2	1	1	90
.....	Employment	9	.....	2	1	.....	2	1	8	.....	1	1	1	1	4	1	1	1	1	27
Sedgwick.....	Plants	68	1	13	21	17	4	86	17	2	1	3	14	15	57	72	2	40	4	439
.....	Employment	41	2	2	1	.....	17	4	4	2	1	2	6	32	31	374	2	40	4	823
Shawnee.....	Plants	45	.....	3	6	5	.....	40	6	.....	1	4	2	12	8	1	1	1	2	126
.....	Employment	14	2	1	1	.....	21	.....	18	.....	1	4	2	2	2	2	1	1	1	82
Wyandotte.....	Plants	81	1	7	10	3	8	24	24	8	2	2	14	4	19	19	8	4	1	218
.....	Employment	95	3	3	8	12	3	23	4	.....	21	.....	13	13	7	94	.....	1	1	303
Total Above Counties.....	Plants	287	2	36	53	30	15	107	84	12	4	7	48	28	110	130	10	82	10	1,101
.....	Employment	183	11	9	7	18	53	81	15	15	31	11	61	64	9	807	1	1	1	1,092

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Cascade.....	Plants	25	1	3	3	8	1	1	4	4	1	3	86
.....	Employment	8	2	2	16	1	1	1	1	1	1	1	29
Deer Lodge.....	Plants	4	1	2	2	4	14
.....	Employment	.....	.....	1	.....	.....	.....	4	.....	.....	.....	18	.....	.....	.....	.....	.....	.....	.....	23
Missoula.....	Plants	15	.....	40	1	.....	4	1	.....	.....	1	1	3	.....	.....	.....	.....	1	1	79
.....	Employment	3	.....	10	.....	1	.....	1	.....	.....	.....	1	1	3	.....	.....	.....	.....	1	22
Yellowstone.....	Plants	30	.....	1	6	2	1	9	3	3	.....	5	.....	10	6	.....	2	1	1	84
.....	Employment	10	.....	.....	2	.....	.....	6	.....	.....	1	34	2	1	.....	.....	.....	.....	1	24
Total Above Counties.....	Plants	74	.....	2	50	6	1	21	7	4	.....	1	11	9	16	9	2	2	2	233
.....	Employment	20	.....	17	.....	7	1	7	6	6	.....	1	34	2	1	.....	.....	.....	1	100



Industrial Potentials by Counties—(Cont'd)

NEBRASKA

COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment)-NUMBER OF PLANTS, 1954 Census																				
	Food	To-bacco	Tex-tile Mill	Ap-parel	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In- stru-ments	Total	
Douglas	Plants	112			18	18	27	6	94	31	2	2	3	17	7	41	40	3	11	8	470
	Employment	169			8	3	8	3	20	11	1	-	1	2	6	16	15	2	8	1	285
Lancaster	Plants	27			4	6	4	2	39	10	-	1	-	4	4	10	12	4	1	2	141
	Employment	16			2	-	-	-	-	-	-	8	-	4	4	2	11	4	-	60	
Total Above Counties	Plants	139			20	24	31	8	133	41	2	3	3	21	11	51	52	7	12	8	611
	Employment	186			9	5	6	3	20	11	1	9	1	7	7	21	17	14	10	1	345

SOUTH DAKOTA

Minnehaha	Plants	30			2	5	2	1	18	3	-	-	-	2	-	7	6	-	2	-	81
	Employment	43			-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	54
Total Above Counties	Plants	30			2	5	2	1	18	3	-	-	-	2	-	7	6	-	2	-	81
	Employment	43			-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	54

UTAH

Salt Lake	Plants	102			2	25	23	28	3	72	25	8	1	-	24	13	48	30	7	2	0	446
	Employment	29			2	8	3	4	1	15	7	8	-	-	10	35	18	15	4	-	-	169
Utah	Plants	24			2	5	3	-	-	13	3	3	-	-	9	6	10	2	-	-	-	84
	Employment	3			3	-	-	-	-	1	1	8	-	-	3	55	2	-	-	-	-	79
Weber	Plants	40			3	5	3	-	-	9	1	-	-	-	6	6	3	1	-	-	-	85
	Employment	17			1	-	-	-	-	2	-	-	-	-	2	-	1	-	-	-	-	31
Total Above Counties	Plants	166			8	30	33	34	3	94	20	11	1	-	30	19	64	35	8	3	6	615
	Employment	61			3	13	3	4	1	19	9	10	-	-	16	90	22	16	4	-	-	280

FAR WEST STATES

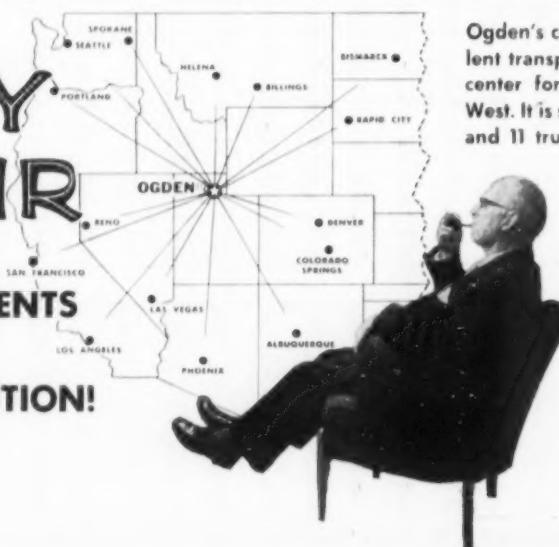
CALIFORNIA

Alameda	Plants	226	1	9	48	73	93	36	139	107	9	21	11	36	61	181	177	43	49	25	1,404
	Employment	143		8	7	10	18	35	42	42	3	9	2	33	42	88	88	19	60	7	685
Butte	Plants	31		1	1	54	-	-	8	2	-	-	-	4	-	7	5	-	1	115	
	Employment	10		-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	34
Contra Costa	Plants	33		2	17	14	13	26	27	6	1	-	-	13	5	25	19	5	12	3	233
	Employment	30		-	1	2	18	4	31	71	4	-	-	11	47	17	11	3	21	-	280
Del Norte	Plants	5		-	-	70	-	2	-	-	-	-	-	1	-	-	-	1	-	-	79
	Employment	-		-	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Fresno	Plants	135		2	13	34	20	2	44	14	3	2	-	10	7	24	45	2	13	1	381
	Employment	55		2	1	10	2	-	7	7	3	-	-	3	2	1	14	-	36	-	140
Humboldt	Plants	18		1	1	432	2	-	13	2	-	-	-	6	1	3	3	1	2	2	488
	Employment	4		-	-	127	-	1	-	-	-	-	-	-	-	-	-	-	-	-	137

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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SALES MANAGEMENT

Industrial Potentials by Counties—(Cont'd)

CALIFORNIA (continued)	COUNTY	SM EMPLOYMENT, 1954, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census																			
		Food	To-bacco	Tex-tile Mill	Ap-parel	Lum-bar (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem-ical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-stru-ments	Total
Kern.....	Plants	38	—	—	2	11	10	—	24	5	10	1	—	9	4	14	30	2	1	2	165
..... Employment	7	—	—	—	—	—	—	—	3	4	8	—	—	4	1	1	4	7	—	44	
Los Angeles.....	Plants	920	9	141	1,928	487	894	206	1,316	851	80	133	185	529	362	1,097	2,068	543	787	280	13,881
..... Employment	501	1	32	453	77	202	118	300	180	115	158	46	192	246	540	547	516	2,404	127	7,188	
Mendocino.....	Plants	14	—	—	235	1	2	5	—	—	—	—	—	1	—	—	4	—	—	2	296
..... Employment	1	—	—	—	55	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	64
Monterey.....	Plants	49	—	—	4	13	4	2	21	10	—	—	1	16	—	7	10	—	1	1	143
..... Employment	16	—	—	—	3	3	—	—	3	3	—	—	—	6	—	—	—	—	—	—	41
Napa.....	Plants	28	—	—	2	2	1	1	8	—	—	—	—	5	3	2	3	2	1	—	58
..... Employment	4	—	—	—	3	—	—	—	—	—	—	—	—	1	10	—	—	—	—	—	21
Orange.....	Plants	72	9	26	24	31	2	83	21	2	8	2	81	9	49	64	7	43	7	539	
..... Employment	26	3	7	2	2	2	11	6	8	—	14	—	10	5	16	18	12	26	9	190	
Riverside.....	Plants	46	—	8	6	7	1	33	6	3	1	1	29	9	15	18	1	4	4	207	
..... Employment	14	—	2	1	—	—	—	4	—	—	—	—	14	16	3	8	14	—	—	87	
Sacramento.....	Plants	81	—	13	31	16	1	38	12	—	1	1	16	3	28	22	4	6	3	288	
..... Employment	69	—	1	10	—	—	—	12	3	—	—	—	1	1	—	4	—	31	—	137	
San Bernardino.....	Plants	89	3	19	28	18	8	41	16	4	2	1	46	8	30	23	5	3	2	371	
..... Employment	17	—	4	1	—	—	3	6	4	4	—	—	17	67	5	3	10	—	—	148	
San Diego.....	Plants	108	—	29	33	42	6	98	20	1	3	2	30	6	62	54	20	45	10	595	
..... Employment	45	—	14	1	5	2	23	4	—	—	—	—	4	5	7	6	408	5	631		
San Francisco.....	Plants	281	4	17	332	46	95	31	395	95	4	7	23	35	27	168	136	32	28	20	1,001
..... Employment	185	—	78	6	27	18	106	23	—	1	3	2	8	58	35	16	26	3	502		
San Joaquin.....	Plants	93	—	4	23	9	5	28	11	—	1	—	16	4	14	35	6	7	—	266	
..... Employment	41	—	—	13	—	—	11	4	1	—	—	—	4	1	5	17	—	4	—	108	
San Mateo.....	Plants	42	3	8	32	26	6	41	27	3	4	9	14	14	60	58	23	10	8	413	
..... Employment	24	—	1	2	2	3	10	14	—	—	—	7	5	19	21	6	56	13	1	190	
Santa Barbara.....	Plants	34	1	5	3	4	1	28	9	3	2	1	7	1	7	5	4	2	—	125	
..... Employment	7	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	22	
Santa Clara.....	Plants	152	—	13	37	20	7	72	24	2	5	1	24	13	44	92	23	6	10	567	
..... Employment	128	—	4	12	1	10	17	7	—	1	8	2	18	23	59	59	28	—	360		
Santa Cruz.....	Plants	40	—	5	12	6	1	9	4	—	—	1	2	1	2	8	1	—	—	99	
..... Employment	19	—	1	2	—	—	1	—	—	—	—	—	3	—	—	—	—	—	—	31	
Shasta.....	Plants	7	—	—	94	—	6	—	—	—	—	—	1	—	2	2	—	—	—	112	
..... Employment	1	—	—	29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32	
Siskiyou.....	Plants	12	—	—	72	1	—	7	—	—	—	—	1	—	—	—	—	—	—	—	94
..... Employment	1	—	—	36	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	37	
Sonoma.....	Plants	79	1	8	101	10	—	18	2	1	1	4	10	1	11	14	1	3	1	271	
..... Employment	21	—	2	23	—	—	3	—	—	—	1	—	1	—	—	—	—	—	—	59	
Stanislaus.....	Plants	75	—	3	8	7	1	21	11	—	—	—	9	3	11	18	1	3	1	176	
..... Employment	53	—	1	—	2	2	2	3	—	—	—	—	1	2	—	—	—	—	—	72	
Tulare.....	Plants	63	—	3	19	1	—	14	1	—	—	—	11	4	9	10	1	1	—	142	
..... Employment	16	—	—	4	—	—	1	—	—	—	—	—	2	1	1	—	—	—	—	30	
Ventura.....	Plants	27	—	2	—	4	1	17	4	4	1	—	5	1	8	10	—	2	—	88	
..... Employment	22	—	—	—	—	1	2	1	—	—	—	—	1	—	1	4	—	—	—	38	
Total Above Counties.....	Plants	2,798	14	187	2,175	1,907	1,333	330	2,538	1,081	135	194	228	983	548	2,468	2,838	725	1,078	384	23,457
..... Employment	1,445	2	64	590	473	271	241	575	341	209	191	72	343	475	798	788	710	3,187	157	11,432	

NEVADA

Clark.....	Plants	19	—	—	1	2	2	—	8	3	—	—	4	2	3	2	—	1	—	58
..... Employment	1	—	—	—	—	—	—	—	4	18	—	—	—	4	12	—	—	—	—	42
Total Above Counties.....	Plants	19	—	—	1	2	2	—	8	3	—	—	8	2	3	2	—	1	—	58
..... Employment	1	—	—	—	—	—	—	—	4	18	—	—	—	4	12	—	—	—	—	42

OREGON

Benton.....	Plants	11	—	—	123	1	2	5	—	—	—	—	4	2	2	2	—	—	—	180
..... Employment	1	—	—	—	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20
Clackamas.....	Plants	11	1	1	210	4	0	0	4	—	—	—	1	10	3	0	11	1	2	284
..... Employment	—	—	—	22	—	—	—	22	—	—	—	—	—	1	—	14	—	—	—	65
Columbia.....	Plants	23	—	—	66	1	—	—	4	2	—	—	1	1	1	1	2	4	—	105
..... Employment	10	—	—	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30
Coos.....	Plants	5	—	—	88	—	0	4	1	1	1	—	—	1	3	1	1	1	1	113
..... Employment	1	—	—	16	—	—	8	—	—	—	—	—	—	—	—	—	—	—	—	27
Coos.....	Plants	20	—	—	288	1	1	0	—	—	—	—	3	1	1	3	—	2	—	303
..... Employment	2	—	—	62	—	2	1	—	—	—	—	—	—	—	—	—	—	—	—	69
Douglas.....	Plants	13	—	—	512	1	—	9	—	—	—	—	1	—	1	5	—	1	—	545
..... Employment	1	—	—	92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	95
Jackson.....	Plants	21	—	—	1	208	1	1	8	3	—	—	4	—	3	3	1	—	—	259
..... Employment	4	—	—	40	—	—	1	—	—	—	—	—	2	—	—	—	—	—	—	49
Josephine.....	Plants	8	—	—	185	—	—	3	—	—	—	—	1	1	—	2	—	—	—	198
..... Employment	—	—	—	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordinance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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Industrial Potentials by Counties—(Cont'd)

OREGON
(continued)

COUNTY	EMPLOYMENT, 1956, in hundreds (Counties with 2,000 or over total industrial employment) NUMBER OF PLANTS, 1954 Census																				
	Food	To-bacco	Tex-tile Mill	Ap-parel	Lum-ber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chemical	Petr. and Coal	Rubber	Leath-er	Stone, Clay, Glass	Prim. Metal	Fahr. Metal	Mach. (exc. elec.)	Elec. Mach.	Trans. Equip.	In-stru-ments	Total	
Klamath	Plants	12	..	..	46	1	..	4	1	..	..	..	2	..	..	4	..	1	..	72
	Employment	2	..	..	33	..	..	..	..	..	..	..	..	..	..	..	1	..	..	37
Lane	Plants	42	..	2	581	1	2	20	3	..	2	..	8	4	8	18	1	1	1	700	
	Employment	6	..	..	118	..	..	4	4	..	..	..	..	..	..	..	1	2	..	139
Lincoln	Plants	6	..	..	172	..	..	5	..	..	..	..	2	..	..	2	..	2	..	190
	Employment	..	..	..	24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25
Linn	Plants	20	..	2	1	207	2	3	12	..	..	..	..	3	1	..	4	1	..	257
	Employment	3	..	..	57	..	..	1	1	..	..	..	..	..	..	..	..	..	..	65
Marien	Plants	47	..	4	1	134	2	3	20	3	3	9	1	9	12	3	2	..	258
	Employment	13	..	..	19	..	..	0	4	..	..	..	..	..	..	..	1	1	..	81
Multnomah	Plants	177	8	54	134	82	22	182	57	10	9	14	32	43	127	131	20	38	18	1,100	
	Employment	81	22	22	70	17	11	30	12	1	..	..	32	46	27	6	10	2	438	
Polk	Plants	7	1	..	92	1	..	2	..	..	..	1	2	..	..	..	6	1	..	113
	Employment	3	1	..	22	..	..	..	..	..	..	..	..	..	..	..	1	..	..	26
Tillamook	Plants	17	..	..	151	..	..	3	1	..	..	..	..	..	..	..	2	..	..	174
	Employment	2	..	..	22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	26
Umatilla	Plants	18	..	1	26	1	2	8	1	..	..	..	1	1	..	4	3	..	..	67
	Employment	6	..	..	14	..	1	..	..	..	..	..	..	..	..	..	..	..	..	28
Washington	Plants	26	..	4	128	2	2	5	2	..	1	1	3	1	3	5	2	2	..	188	
	Employment	9	..	..	16	..	..	..	..	..	..	..	..	..	..	4	..	2	..	36
Total Above Counties	Plants	481	..	17	64	3,322	81	50	277	78	11	12	23	88	86	170	218	29	53	18	5,158
	Employment	181	..	27	23	697	18	60	49	15	1	..	2	10	33	66	35	11	22	4	1,261

WASHINGTON

Benton	Plants	9	..	..	1	..	..	..	6	2	..	..	..	4	..	..	..	..	1	22
	Employment	3	..	..	..	..	..	..	..	97	..	..	..	..	..	..	..	..	..	101
Chelan	Plants	20	..	2	20	1	1	7	..	..	..	..	..	3	2	1	6	..	..	64
	Employment	3	..	..	5	..	..	1	..	..	..	..	..	..	13	..	1	..	..	28
Clallam	Plants	6	..	..	99	..	5	7	..	..	..	..	..	1	1	..	2	..	..	129
	Employment	..	..	..	22	..	13	1	..	..	..	..	..	..	..	..	..	..	..	37
Clark	Plants	18	1	3	62	3	9	11	3	..	..	..	..	10	4	..	6	1	..	134
	Employment	8	4	4	12	..	34	1	1	..	..	..	..	2	16	..	2	..	..	87
Cowlitz	Plants	12	..	..	120	2	9	6	1	..	..	..	..	2	2	2	2	..	..	181
	Employment	..	..	..	52	2	28	1	..	..	..	..	..	..	4	..	..	..	..	99
Graye Harbor	Plants	20	..	1	168	4	2	7	1	1	..	..	..	1	2	1	1	3	..	203
	Employment	4	..	..	55	4	7	..	..	..	..	..	..	..	..	..	..	..	..	76
King	Plants	224	12	88	188	74	15	190	63	6	5	18	50	41	144	127	23	58	24	1,447	
	Employment	89	1	24	56	10	8	37	11	5	14	26	45	33	11	463	2	830
Lewis	Plants	31	..	1	175	..	..	6	1	..	..	2	3	..	3	1	..	..	..	223
	Employment	5	..	..	24	..	1	..	..	..	..	..	..	..	..	..	..	..	..	33
Mason	Plants	7	..	..	66	..	4	3	..	..	..	..	..	..	..	..	..	..	..	90
	Employment	..	..	..	14	..	9	..	..	..	..	..	..	..	..	..	..	..	..	24
Pierce	Plants	64	1	13	141	30	12	46	14	2	..	2	10	10	19	18	5	18	3	432	
	Employment	28	..	5	61	13	13	7	9	..	..	..	1	22	8	3	1	5	..	178
Skagit	Plants	37	..	1	88	1	3	7	4	..	..	..	4	2	2	5	1	2	..	188
	Employment	7	..	..	14	..	2	1	..	..	..	..	8	4	..	5	..	..	..	49
Snohomish	Plants	40	3	168	2	7	14	5	2	..	1	9	1	8	6	2	12	..	..	294
	Employment	6	..	50	..	30	2	..	..	..	..	1	..	..	3	..	2	..	..	190
Spokane	Plants	71	8	68	9	3	42	10	1	2	3	19	9	27	27	2	9	3	330		
	Employment	23	..	22	1	3	10	1	..	..	..	4	64	4	5	..	2	..	..	147
Thurston	Plants	13	..	..	74	2	..	8	1	..	..	..	1	1	2	..	..	1	..	104
	Employment	6	..	21	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	30
Whatcom	Plants	31	..	3	77	2	3	11	3	1	1	..	4	4	8	9	..	8	..	164	
	Employment	7	..	..	15	..	6	1	..	..	..	..	1	..	..	..	..	6	..	44
Yakima	Plants	78	2	4	19	3	2	15	7	..	1	..	10	2	7	11	..	2	..	165	
	Employment	23	..	..	9	..	3	2	..	..	..	..	2	..	..	..	..	..	..	48
Total Above Counties	Plants	678	..	16	128	1,517	133	75	379	115	13	9	24	138	80	224	223	34	113	31	4,101
	Employment	198	..	9	37	429	33	161	72	123	3	1	6	37	162	59	68	13	482	2	1,098

Figures in "Total" column (far right) exceed sum of employment in 19 industries because "Total" includes miscellaneous classifications, ordnance, and industries employing less than 100 persons. "Total Above Counties" exceeds sum of above counties as it includes employment figures under 100.

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76 INDUSTRIES WITH \$1 BILLION OR MORE SALES IN 1956*

S.I.C. Code	Name	Gross Sales 1957 (Jan. 1) (\$000,000)	Rank 1957	1954 (\$000,000)	Growth Index 1957 over 1954	Index Rank
2011	Meat packing, wholesale.....	11,073	3	9,906	112	48
2013	Prepared meats.....	1,595	39	1,415	113	46
2027	Fluid milk products.....	4,657	7	4,234	110	58
2033	Canned fruits and vegetables.....	2,496	20	2,229	112	48
2041	Flour and meal.....	1,933	26	1,858	104	73
2042	Prepared animal feeds.....	2,524	19	2,702	93	76
2051	Bread and related products.....	3,036	13	3,067	99	75
2071	Confectionery products.....	1,082	70	993	109	62
2081	Bottled soft drinks.....	1,204	60	1,113	108	65
2082	Beer and ale.....	1,987	25	1,857	107	68
2099	Food preparations, n.e.c.	3,582	11	3,256	110	58
2111	Cigarettes.....	1,755	33	1,641	107	68
2141	Tobacco stemming.....	1,105	68	1,043	106	70
2213	Woolen and worsted fabrics.....	1,211	59	890	136	4
2224	Yarn mills, cotton system.....	1,113	67	1,031	108	65
2233	Cotton broad-woven fabrics.....	2,957	14	2,790	106	70
2234	Synthetic broad-woven fabrics.....	1,234	57	1,143	108	65
2261	Finishing textiles, except wool.....	1,148	64	1,044	110	58
2311	Men's and boys' suits and coats.....	1,300	54	1,141	114	38
2321	Men's dress shirts and nightwear.....	1,029	74	894	115	32
2333	Women's dresses, unit price.....	1,615	37	1,455	111	54
2337	Women's suits, coats, skirts.....	1,413	48	1,267	112	48
2421	Sawmills and planing mills.....	3,637	9	3,247	112	48
2511	Wood furniture, not upholstered.....	1,274	55	1,113	114	38
2611	Pulp mills.....	1,766	31	1,577	112	48
2612	Paper and paper board mills.....	4,574	8	3,792	121	20
2671	Paperboard boxes.....	2,615	17	2,180	120	21
2699	Paper and board products, n.e.c.	1,756	32	1,428	123	17
2711	Newspapers.....	3,431	12	3,091	111	54
2721	Periodicals.....	1,614	38	1,441	112	48
2751	Commercial printing.....	2,525	18	2,202	115	32
2761	Lithographing.....	1,087	69	963	113	46
2819	Inorganic chemicals, n.e.c.	2,231	21	1,859	120	21
2823	Plastic materials.....	1,712	34	1,231	139	2
2825	Synthetic fibers.....	1,481	45	1,241	119	26
2829	Organic chemicals, n.e.c.	2,832	15	2,199	129	10
2834	Pharmaceutical preparations.....	1,889	28	1,643	115	32
2851	Paints and varnishes.....	1,629	35	1,494	109	62
2911	Petroleum refining.....	13,391	2	11,757	114	38
2932	By-product coke ovens.....	1,489	44	1,241	120	21
3011	Tires and inner tubes.....	2,173	22	1,842	118	28
3099	Rubber industries, n.e.c.	1,928	27	1,677	115	32
3141	Footwear, except rubber.....	2,041	24	1,791	114	38
3312	Blast furnaces and steel mills.....	14,157	1	10,890	130	8
3321	Gray-iron foundries.....	1,810	30	1,419	128	11
3351	Copper rolling and drawing.....	1,585	40	1,320	120	21
3352	Aluminum rolling and drawing.....	1,242	56	874	142	1
3361	Non-ferrous foundries.....	1,127	66	824	137	3
3392	Wire drawing.....	1,545	42	1,246	124	16
3411	Tin cans and other tinware.....	1,626	36	1,367	119	26
3429	Hardware, n.e.c.	1,232	58	1,112	111	54
3439	Heating and cooking apparatus, n.e.c.	1,322	52	1,147	115	32
3441	Structural and ornamental work.....	2,055	23	1,810	114	38
3443	Boiler shop products.....	1,315	53	1,134	116	31
3519	Internal combustion engines.....	1,024	75	891	115	32
3521	Tractors.....	1,342	51	1,178	114	38
3522	Farm machinery, except tractors.....	1,194	61	1,096	109	62
3531	Construction and mining machinery.....	1,415	47	1,132	125	12
3541	Machine tools.....	1,411	49	1,147	123	17
3542	Metalworking machinery.....	1,050	73	840	125	12
3544	Special dies and tools.....	1,164	63	932	125	12
3561	Pump and compressors.....	1,069	72	891	120	21
3585	Refrigeration machinery.....	1,517	43	1,367	111	54
3591	Valves and fittings, except plumbing.....	1,184	62	959	123	17
3599	Machine shops.....	1,385	50	1,107	125	12
3614	Motors and generators.....	1,861	29	1,389	134	7
3616	Electrical control apparatus.....	1,481	46	1,097	135	5
3621	Electrical appliances.....	1,073	71	795	135	5
3661	Radio and related products.....	5,717	6	5,661	101	74
3717	Motor vehicles and parts.....	10,422	4	9,475	110	58
3721	Aircraft.....	7,155	5	6,267	114	38
3722	Aircraft engines.....	3,635	10	3,189	114	38
3729	Aircraft equipment, n.e.c.	2,741	16	2,343	117	29
3731	Shipbuilding and repairing.....	1,131	65	1,078	105	72
3861	Photographic equipment.....	1,014	76	867	117	29
3971	Plastics products, n.e.c.	1,551	41	1,193	130	8

*See table on page 24
JULY 10, 1957

Summary of All Employment Data by States and Sections

SECTIONS and STATES		EMPLOYMENT— ESTIMATES, 1956 (in hundreds)																			
		Food	Tobacco	Textile Mill	Ap- parel	Lumber (exc. furn.)	Furn. and Fixt.	Paper	Print'g and Publ.	Chem- ical	Petr. and Coal	Rubber	Leath- er	Stone, Clay, Glass	Prim. Metal	Fabr. Metal	Mach. (ex- clic.)	Elec. Mach.	Trans. Equip.	In- stru- ments	Total
NEW ENGLAND																					
Connecticut	13.0	.3	24.9	17.1	1.8	2.8	8.7	14.2	10.8	.5	14.6	2.5	5.3	28.8	45.5	75.0	33.0	73.1	15.6	421.1	
Maine	11.1	16.5	3.4	19.8	.8	18.2	2.0	.6	.1	21.6	.9	.3	2.6	3.9	.9	3.9	.9	3.9	108.1		
Massachusetts	49.6	.4	63.2	61.2	6.6	13.3	36.4	38.4	18.1	2.2	26.9	66.2	12.0	19.4	37.8	80.8	82.3	23.3	21.8	699.8	
New Hampshire	2.8	.3	13.8	2.0	6.1	1.9	6.5	3.0	.4	.6	20.1	1.8	.7	1.9	7.2	8.4	.3	3.3	.3	80.6	
Rhode Island	6.0	36.0	4.7	.5	.7	1.9	3.8	1.4	.4	5.3	.7	2.2	7.2	6.5	13.2	3.2	1.3	2.0	121.9		
Vermont	3.2	2.3	2.4	4.8	1.4	2.1	1.3	.2	.1	.5	4.2	.6	.9	8.8	.9	.9	.4	.4	.4	37.4	
	88.7	1.0	166.4	90.9	39.8	20.8	73.6	82.7	31.8	3.1	48.6	110.8	26.4	57.0	98.2	188.6	128.7	101.8	40.1	1,468.9	
MIDDLE ATLANTIC																					
New Jersey	62.1	2.6	44.5	80.0	5.1	9.3	26.4	26.8	86.0	16.2	15.4	12.2	33.8	40.2	55.7	74.2	111.2	54.7	29.6	813.8	
New York	153.5	.5	90.0	371.6	16.5	38.6	68.5	174.7	70.7	5.7	10.0	62.4	43.4	84.0	107.0	158.4	134.8	126.7	77.2	1,994.0	
Pennsylvania	112.8	15.2	94.5	186.8	12.9	24.6	40.2	68.8	46.7	26.1	14.2	30.7	68.6	234.8	114.6	145.2	114.5	68.3	27.6	1,462.8	
	328.4	18.3	199.0	818.2	35.5	72.5	135.1	287.3	203.4	48.0	39.6	105.3	145.8	381.8	277.3	377.8	380.5	249.7	134.6	4,170.6	
EAST NORTH CENTRAL																					
Illinois	136.8	.7	8.5	47.9	13.2	32.7	31.5	96.5	52.5	16.5	7.8	21.6	37.7	103.8	130.7	226.7	156.9	56.0	38.9	1,251.0	
Indiana	50.0	.9	2.4	14.7	10.7	21.2	10.7	19.9	25.7	15.2	16.8	2.7	25.8	98.5	45.9	64.4	72.8	102.5	3.0	612.2	
Michigan	56.9	.7	2.9	8.8	15.5	19.4	25.6	24.2	39.7	4.3	13.3	4.2	18.7	88.3	100.3	176.0	21.8	341.4	9.8	993.6	
Ohio	86.1	1.5	11.3	26.1	9.9	21.3	38.5	61.6	44.2	12.4	78.1	12.7	70.0	192.2	130.9	239.3	97.6	163.8	9.8	1,337.1	
Wisconsin	63.7	.3	7.7	8.2	19.4	11.7	38.2	21.1	8.6	1.1	8.1	8.1	30.0	37.8	97.2	42.7	26.7	8.5	459.5		
	392.3	4.1	33.8	105.7	68.7	108.3	142.4	223.2	170.7	49.5	121.1	88.8	157.3	807.8	334.6	803.6	391.8	890.4	70.0	4,653.4	
WEST NORTH CENTRAL																					
Iowa	53.8	.6	4.1	5.1	2.5	2.2	12.2	6.8	.1	4.0	.8	5.7	6.5	6.1	33.4	10.4	5.2	2.1	167.0		
Kansas	22.0		2.5	1.2	.7	2.0	8.6	7.9	4.1	1.6	.1	6.6	.7	5.5	9.3	1.4	47.1	.1	122.3		
Minnesota	81.4	2.7	9.0	8.7	2.5	16.2	20.9	5.8	1.8	.7	1.6	6.8	6.7	11.2	28.3	6.8	7.8	12.3	215.3		
Missouri	53.3	1.0	2.8	35.8	7.3	7.7	11.7	25.6	20.0	3.2	.8	35.7	16.3	14.0	24.9	25.3	26.7	48.2	3.4	376.0	
Nebraska	32.6		1.5	1.1	1.0	.6	6.0	1.7	.1	1.0	.1	1.5	.7	2.8	3.4	2.3	1.3	.3	56.9		
North Dakota	3.3							1.2	.1	.1				.3						5.8	
South Dakota	7.8					.9	.1	1.5	.1				.4							11.4	
	224.1	1.0	8.0	82.9	24.3	14.8	32.7	76.0	42.3	9.4	8.2	38.0	37.3	28.6	81.1	100.2	47.6	108.3	18.2	864.8	
SOUTH ATLANTIC																					
Delaware	6.3	.1	2.5	3.4	1.8	.1	.9	1.4	8.3	.1	1.1	2.0	.5	3.4	1.2	3.0	.1	3.2	.2	41.4	
District of Columbia	6.9		.2	.2	.3	.8	11.1	.2					.2							21.4	
Florida																					
Georgia	33.6	8.0	.5	7.4	16.9	5.8	13.8	11.9	11.6	.3	.4	.5	7.8	.9	10.7	3.7	1.0	6.7	4.4	143.9	
Maryland	38.1	1.0	102.7	41.3	31.4	7.6	15.8	8.6	10.5	.5	5.6	8.9	3.2	6.1	8.8	2.6	30.2	1.1	327.8		
North Carolina	26.8	29.5	223.4	27.4	35.3	37.5	10.9	7.7	12.1	1.1	1.4	1.4	7.4	2.3	5.1	7.1	15.8	5.0	8	466.8	
South Carolina	8.9	1.7	127.9	24.9	18.4	3.8	6.8	3.5	20.5	.2	.1	.1	8.2	.8	1.4	3.0	.7	.8	1	223.9	
Virginia	29.8	16.8	36.4	21.6	24.3	17.2	11.8	8.9	36.3	.2	1.3	8.1	7.3	3.6	7.3	2.6	.7	18.1	1.6	254.7	
West Virginia	9.0	1.3	2.5	4.9	8.4	1.2	1.7	3.3	23.0	.2	.7	.3	25.3	21.4	9.0	3.7	4.3	1.4	.3	127.6	
	198.2	88.3	500.1	104.1	139.6	77.8	70.4	67.8	133.8	7.5	11.8	16.1	70.8	70.8	56.4	43.6	38.5	111.0	5.4	1869.5	
EAST SOUTH CENTRAL																					
Alabama	17.4	.8	44.7	23.0	28.9	2.1	10.1	5.1	8.9	3.4	8.0	.3	8.9	39.0	9.9	7.0	3.3	13.1		232.2	
Kentucky	26.6	11.0	3.8	18.1	10.4	5.6	1.2	7.7	11.0	1.7	.1	2.7	5.1	9.0	16.0	19.4	12.3	4.4	1.1	168.7	
Mississippi	11.3		5.3	24.5	21.0	4.7	8.8	2.3	5.3	.2	1.2	.2	3.3	.2	6.2	2.0	1.8	1.2	6.2	1.1	102.3
Tennessee	29.0	1.2	32.5	32.7	20.1	11.3	8.2	11.5	46.3	.6	5.7	12.1	8.9	15.1	16.0	9.9	5.4	6.6	2.4	283.4	
	84.3	13.0	86.3	98.3	78.4	23.7	28.1	26.6	70.5	5.9	13.0	16.3	26.2	83.3	47.9	38.7	22.2	30.3	3.8	786.6	
WEST SOUTH CENTRAL																					
Arkansas	14.2		2.2	6.5	23.5	6.1	4.8	2.9	8.3	1.4			3.8	3.1	3.1	2.0	.8	1.9		86.9	
Louisiana	27.1	1.2	2.1	6.1	18.2	1.3	17.9	8.0	18.3	13.6	.1	2.7	5.4	4.2	5.2	6.2	2.8	1.1	8.6	.2	138.5
Oklahoma	16.2		1.2	2.4	1.8	1.7	.7	6.3	1.7	6.8	2.0	.2	6.2	4.2	6.8	13.0	1.3	11.0	.5	87.6	
Texas	74.7	.2	7.5	29.1	20.7	10.8	9.3	26.7	42.7	42.3	3.1	4.3	17.5	26.1	22.2	40.3	6.9	65.2	3.1	469.2	
	132.2	1.4	13.0	44.1	84.2	19.9	32.5	40.9	68.0	63.8	5.1	8.3	32.2	37.8	36.2	56.7	10.2	85.3	3.8	772.2	
MOUNTAIN																					
Arizona	4.8		.8	2.8	.3	.8	2.6	1.4		1.0	5.3	1.9	1.1	5.0	1.3	1.4	6.0			35.1	
Colorado	16.7	.1	2.0	3.0	1.0	.8	6.8	3.2	1.0	5.3	1.9	3.2	8.1	2.8	5.2	1.0	3.9	.8		68.6	
Idaho	8.2		.1	12.3	.1	.9	1.1	.9					8.1	1.2	4.2	.2				26.9	
Montana	4.2																			20.9	
Nevada	.8																			7.1	
New Mexico	2.9		.3	2.1	.1	.1	1.2	6.3	.5		.1		1.0	1.8	.1					15.8	
Utah	8.1	.2	1.6	.6	.4	.1	2.0	1.1	2.1	.3	2.4	.4	9.8	2.7	1.5	.2				34.6	
Wyoming	1.4																			8.0	
	47.2		.3	4.7	29.8	1.9	1.8	16.8	15.7	7.0	5.6	2.1	9.8	30.8	7.8	8.7	1.2	10.4	.9	210.0	
PACIFIC																					
California	156.3	.2	5.0	58.4	81.8	28.7	24.7	81.4	34.9	22.0	19.1	8.8	38.8	46.9	80.0	86.9	80.8	322.4	16.0	1,207.8	
Oregon	21.6		2.6	2.7	78.4	2.1	6.7	8.4	1.4	4	.3	.2	1.3	4.4	5.8	4.5	2.0	3.3	.8	146.0	
Washington	27.2	.6	4.3	47.2	3.8	17.3	8.3	12.2	.6	.1	.8	3.6	15.9	5.5	5.9	1.0	45.6	.4	204.1		
	205.1	.2	8.4	65.4	187.4	32.8	48.7	75.1	48.5	23.3	19.8	7.8	43.7	87.2	92.1	87.3	83.8	371.3	15.9	1,567.9	
U. S.	1,887.6	97.3	1,003.3	1,238.3	687.5	370.1	546.5	586.0	784.2	217.5	272.5	382.3	549.1	1,243.8	1,111.0	1,715.0	1,082.5	1,788.3	292.8	18,446.9	

The Metal Shows Move South!

Manufacturing has transformed THE SOUTH! In one of the greatest industrial revolutions the country has ever seen metals are paramount! Across the full sweep of states south of the Mason-Dixon Line and westward to Arizona the growing manufacture of metal products and increasing use of machines in non-metallic industry have opened new and rich markets now ripe for metal shows.

The American Society For Metals' *Southwestern Metal Exposition* in Dallas, May 12 to 16, 1958, will be the first great modern and all-inclusive metal show ever held in THE SOUTH. Plans are formulating for an equally significant Southeastern show in 1960. Together they will rank with the famous metal shows of Cleveland, Chicago, Philadelphia, Detroit and Los Angeles. They mean that THE SOUTH now rates as one of the nation's great regional producers and users of metal products.

In this broad band of SOUTHERN states, that the Department of Commerce has coupled with the Pacific states as one of the two fastest growing regions, the 1954 Census of Manufactures revealed more than a quarter of the country's manufacturing establishments and industrial employees, producing nearly a quar-

ter of the values added by manufacture. Eleven states tributary to Dallas in the western half of the region were reported with more than 40 percent of the industrial production of the entire SOUTH.

Growth indexes for THE SOUTH from 1939 to 1954 far exceed those for the balance of the nation, and at point after point, and for metal industries, climb sometimes to fantastic levels. Against a census rise in value added by manufacture of 360% in all manufacturing for the rest of the country, THE SOUTH rose 449%.

National average gain in value added by manufacture for Fabricated Metal Products (S.I.C. 34) was 454%, but for Texas 887%. Machinery (except electrical) (S.I.C. 35) had a national gain of 504%, but in Texas 762%. The gain in the Dallas and Fort Worth Metropolitan County Areas by all manufacturing industries (S.I.C. 20-39) was 857% against the national average of 374%.

Industrial employment increase from 1939 to 1956, the last full calendar year, for all manufacturing industries was 88% for THE SOUTH, against 68% for the balance of the country. (See current details in this *Survey Of Industrial Buying Power*.) This trend will continue strongly into the future.

To get your share of this vigorous and rapidly expanding SOUTHERN metals market—Move South With The Metal Shows! *The Southwestern Metal Exposition* will be packed with your customers from all over THE SOUTH.

So act today—select your space. If you don't have floor plans, write us NOW. You'll reap a harvest from this new and finer Metal Show. To assure success in '58—Don't Hesitate!



Southwestern Metal Exposition

W. H. EISENMAN, Managing Director • CHESTER L. WELLS, Assistant Director

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State Fair Park Is Only Two Miles from Downtown Hotels

METAL SHOWS OWNED AND OPERATED BY THE AMERICAN SOCIETY FOR METALS

Industrial Market Data Sources

No single volume can come even close to presenting the wealth of data available on the industrial market for goods, materials and services. Government publications are obvious. Perhaps less obvious, but often more important, because they are likely to be more sharply angled and more up-to-date, are the studies prepared by industrial magazines.

From hundreds of surveys and studies made by publishers in this field, the editors of SALES MANAGEMENT have selected the following as being particularly helpful and available for general distribution. The list is introduced as being comprehensive, but by no means all-inclusive.

In requesting copies, please direct your inquiries to the listed publishers—not to SALES MANAGEMENT.

Ahrens Publishing Co., Inc., 71 Vanderbilt Ave., New York 17, N.Y. "Analysis of the Food Services Industry." This report covers food purchases of 512,971 outside-the-home feeding establishments—commercial, semi-commercial, charitable and institutional feeding. Also a 24" x 37" map of the U.S., showing the restaurant and hotel markets—their important channels of distribution. To be published this summer, a 100-page selling manual, "Selling to Restaurants and Hotels," written primarily for manufacturer salesmen.

American Artisan, 6 N. Michigan Ave., Chicago 2, Ill. "How American Houses Are Heated." Results of a special tabulation, performed by the Bureau of the Census, relating heating characteristics to single family homes—also relating usage of coal, oil and gas to types of heating systems. Another report, "Winter Air Conditioning Units and Warm Air Furnaces," covers a 1955-56 survey of distribution.

American Builder, 30 Church St., New York 7, N.Y. Two studies: "The Job Ahead for the Building Industry" reports the long-range need for housing in the U.S.; the prospects for a 100-billion-dollar-a-year construction industry in a little over a decade hence; the outlook for 2 million houses in demand by the 1970's, with basic factors underlining this prospective expansion. "What Builders Are Reading Today" gives results of a survey of builders; reports the relative importance of buying powers in the building industry; construction activities engaged in, and the readership of building magazines. Also "Reprints of Articles" on various phases of light construction: air conditioning and heating; estimating; prefabrication; wiring, electrical and horsepower; kitchens and bathrooms; remodeling; power tools and equipment.

American Lumberman & Building Products Merchantiser, 139 N. Clark St., Chicago 2, Ill. "The Market for Materials Handling Equipment and Automotive Trucks Among Lumber and Building

Product Dealers" is a report on ownership and purchases.

American Machinist, 330 W. 42nd St., New York 36, N.Y. "Inventory of Metalworking Operations." This survey was conducted in 4,085 metalworking plants employing 50 or more workers. Operations are tabulated by 3-digit S.I.C. categories. Also "Inventory of Metalworking Production Equipment" which includes industry, equipment and geographic analyses and tables, and maintenance and training equipment.

Applied Hydraulics, 1240 Ontario St., Cleveland 13, O. "Applied Hydraulics Market Analysis." A study of the people who make up the hydraulic and pneumatic market—who they are, what they do, where they work, what they buy.

Automotive Industries, Chestnut and 56th Streets, Philadelphia 39, Pa. Two reports: "Consumption of Steel by Market Classification—1956." To compare the market rise of various metalworking and metal-consumer industries, this study presents charts based on the American Iron & Steel Institute's complete reports on steel shipments to specific markets, by grade and shapes of steel, for 1956. "Grinding Wheels and Coated Corrosives" reports the findings of a survey of the market covered by automotive industries.

Building Supply News, 5 S. Wabash Ave., Chicago 3, Ill. Four studies: "Vital Statistics about Lumber and Building Material Dealers," to determine what, if any, major changes are occurring in dealer sales activity in any particular categories. "How Many Lumber and Building Material Dealers Sell Building Specialty Products" details what building specialty products they sell and how they sell them. "Electrical Supplies and Fixtures" reports results of a survey to determine the present status of electrical supplies and fixtures as a product category handled by lumber and building material dealers. "Files, Rasp, Stapling Equipment" covers brand preferences, inventory and selling practices among lumber and building material dealers. Also these

reports which analyze to what extent lumber and building material dealers are selling, stocking, installing, etc., various products: "Selling Resilient Floor Covering Through the Lumber and Building Material Dealer;" "How lumber and Building Material Dealers Use Materials Handling Equipment;" "Lawn, Garden and Outdoor Living Products." "Power and Hand Tools." "Glass Blocks, Glass Ventilators, Masonry Wall Reinforcing, Mason Tools, Concrete Forms and Clamps, Prefabricated Chimneys, Masonry Paints, Waterproofing Compounds, and Cement Bonding Agents;" "Cordage." And these reports which have to do with wholesalers—distributors who supply lumber and building material dealers: "Appliance Wholesalers;" "Plumbing—Heating Wholesalers;" "Electrical Wholesalers." "Hardware & Building Material Wholesaler Sales."

Chemical Engineering, 330 W. 42nd St., New York 36, N.Y. "Population Boom Challenges Chemical Technology." Thirtieth annual review of what the population boom means to the chemical engineer, covering such subjects as Man-made Polymers, Plastics, Synthetic Fibers, Pulp Processes, Water Shortages and Fresh Water from the Sea, Higher Octanes, Chemical Fuels. Also "Buying Influences and Magazine Preferences Among 29 Leading Chemical Manufacturers" which includes chemicals and raw materials, plant-processing equipment, materials of construction, operating supplies, laboratory chemicals and equipment, and services.

Chemical Engineering News, 430 Park Ave., New York 22, N.Y. "Atomic Energy in Chemical Business." This is a report on the atomic energy market in the Chemical industry, the role of Government; Atomic Energy Commission operations and purchasing offices. It also lists products purchased by AEC operations offices.

Chemical Engineering Progress, 25 West 45th St., New York 36, N.Y. "Reader Study #1" provides data on the buying influence of chemical engineers for equipment and engineering materials and services; "Reader Study #2," data on the buying influence of chemical engineers for chemicals and raw materials. Included in both reports are job titles, job functions, annual incomes, specifying and buying influence for 125 chemicals and raw materials and 65 products and services, together with a summary of main conclusions from the studies.

Chemical Week, 330 W. 42nd St., New York 36, N.Y. "The Chemical Process Industries: 1957" reports on what's ahead in sales, profits, taxes, dividends, expansion and production in these industries.

Coal Age, 330 W. 42nd St., New York 36, N.Y. "Mechanical Cleaning Plants." This study has to do with plants in operation or under construction in the bituminous coal mining industry in 1955:



a faucet is to splash

In these words a child expresses the very essence of function, by-passing conventional definition of an object.

Would there were as simple a way to express the vital function of a business publication! You could say, "a business paper is to read," but that hardly does justice to a service that:

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- . . . condenses it for quick absorption
- . . . interprets significant developments
- . . . delivers the whole package regularly in attractive form
- . . . and in doing so provides a vehicle that enables suppliers to talk to a selected group of business men in their own language and in terms of their special interests.

Perhaps the word "service" is the key. Perhaps the phrase we're searching for is a simple one, after all: *a business paper is to serve*.

On the following pages, *E. A. Schirmer, Senior Vice President, CAMPBELL-EWALD COMPANY*, tells how he feels about the services business papers perform.

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Mr. John W. Hartman
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New York

Dear John:

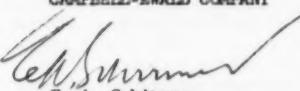
Because of the terrific pressures under which we in this business constantly work, I can think of no better way to keep current on the various aspects of our whole economy than to peruse and study the editorial content of our leading business publications.

The editors of such publications have necessarily developed the ability to analyze the basic factors which establish business trends and to present them in capsule form for a busy man's consumption. That seems to me to be the great strength of business publications.

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E. A. Schirmer
Senior Vice President

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company, location, equipment, capacity. Also "Coal Mining Electric Wire and Cable Demand Will Gain Sharply During 1957-1960," which presents data on major portions of this market that will involve annual purchases of approximately 76 million feet of wire and cable, and in the four-year period 1957 to 1960 that will offer a market for 312 million feet of wire and cable. And "Bituminous Coal for Today and Tomorrow," an address by Joseph R. Forsythe, General Manager, Keystone Coal Buyers Manual, before the New York Section of the American Institute of Mining, Metallurgical and Petroleum Engineers, Inc.

Commercial Refrigeration & Air Conditioning, 812 Huron Road, Cleveland 15, O. "A Study of 476 Independent Air Conditioning and Refrigeration Wholesalers" evaluates the degree of relative acceptance by leading air conditioning and refrigeration wholesalers of some basic product lines of manufacturers who have traditionally used this distribution channel. Also "The Changing Air Conditioning Market," which is a study of activities, buying habits and preferences of 275 refrigeration and air conditioning contractors.

Domestic Engineering, 1801 Prairie Ave., Chicago 16, Ill. "Survey of New Residential Heating Installations, 1952-1955" includes totals for the entire gas utility industry (thousands of customers): existing residential customers, December 31, 1951; anticipated additional house-heating customers 1952-1953 heating season. In addition: "Leading Areas in Homebuilding, 1954-1955" lists Metropolitan Areas and their rankings, 1955 and 1954; gives the number of new dwelling units and percent of change, 1954-55; non-farm population in 1950 and percent of increase 1940-50; 1955 dwelling units, rate per 1,000, 1950 population and 1940-50 increase in population. "Shipments of Refrigeration Machinery and Air-Conditioning Equipment, 1954 and 1947" includes data on the product and total shipments (number of units). "News Letters" covering metal plumbing fittings (brass goods); distribution of oil-fires installations; boiler and furnace sales.

Dun's Review, 99 Church St., New York 8, N. Y. "Report No. 2 (from Syracuse, N. Y.)" and "Report No. 3 (from Dallas, Tex.)" explore the buying influences of executives, their availability to salesmen, and their readership habits.

Electrical Manufacturing, 1250 Sixth Ave., New York 20, N. Y. Three studies: "The Original Equipment Market for Motors, Controls, Drives and Other Related Components" reports the findings of a study made among all manufacturers of electric motor-operated machines, appliances and equipment, to enable those companies engaged in the production and sale of these products to visualize in its entirety the market for electrochemical drive systems. "The Original Equipment Market for Materials in the Field of Electrically Operated Machines, Appliances and Equipment" gives results of a survey of engineers

and designers responsible for product design and development in all plants making electrically operated machines, appliances and equipment, to determine range of applications of selected types of materials within electrically operated machines, appliances and equipment; combination of plastics, insulating and non-metallic materials, ferrous and non-ferrous metals and alloys that are used in the design of individual products; specifying influences involved in selection and purchase of materials for designed-in use in electrically operated production. "The Original Equipment Market for Instruments in the Field of Electrically Operated Machines, Appliances and Equipment" is a study made among manufacturers of machine tools, special industrial machinery, business machines, primary electrical equipment, electronics and communications equipment, aircraft, guided missile and navigational equipment, electronic computers and similar products.

Electronics, 330 W. 42nd St., New York 36, N. Y. "5 Years of Electronics" is a compilation of data on the industry's annual dollar volume over the years; industrial electronics; factory sales of receiving tubes; radar developments; annual production of radio and television receivers; employment in the communications equipment field; A-M and F-M stations on the air. In addition there are these reports: "Transistor Sales Potentials" points up that sales for 1957 are expected to exceed \$50 million. "Market Data Sheet" includes estimated electronics production (factory sales-end equipment, 1948 through 1956. "Industry Report" gives data showing how industry boosts plant expansion for 1957. "Electronics Markets," a non-technical monthly in electronic and allied developments.

Engineering and Mining Journal, 330 W. 42nd St., New York 36, N. Y. "Significant Trends and the Long-Range Outlook for the Metal and Non-Metallic Mining Industry" includes a 10-year forecast of mineral requirements; long-range planning; technical trends with special comments pertaining to the earth-moving aspects of the mining industry; technical trends in mining with special comments pertaining to the field of milling, smelting, refining, power distribution and controls. Also "Highlighting Current Mining Activities," a news letter for sales executives concerned with mining markets.

Factory, 330 N. 42nd St., New York 36, N. Y. Four reports: "Plant Practices on Vacuum Tube Usage" reports on range of application, sources of supply, improvements desired, and measures buying influences. "The Factory Market for Valves" provides data on types and sizes of valves most used in manufacturing industries, materials handled by valves, and tells how valves are bought. "Plant Practices on Electric Motor Usage" gives sources of supply used; details factors considered in selection, types of motors in use—trends, and measures buying influences. "Plant Ownership and Use of Trucks, Station Wagons" includes

data on truck ownership by make, size, age and plant users; primary and other uses for station wagons; purchase plans.

Flow, 812 Huron Road, Cleveland 15, O. Three reports: "Market for Powered Industrial Trucks" presents information on industry's use of powered industrial trucks, by types; reveals contemplated purchases in each category; reports on attachments used and operations performed, and provides data on depreciation and replacement practices. "Market for Bulk and Package Conveyors" covers use of conveyors, both for bulk and packaged materials, by types; planned purchases in each category; dimension and volume handled; trends on an industry by industry basis; replacement for active and maintenance expenditure. "Market for Overhead Cranes and Hoists" reports on the use of overhead cranes and hoists by industry; number in use by type; planned purchases of each; attachments used; type of operation where the hoist or crane is employed; depreciation and replacement practices.

Foundry, Penton Building, Cleveland 13, O. Three reports: "Foundry Industry Marketing Guide" covers market areas, capacity by states, industry statistics. "Inventory of Foundry Equipment," is a study of volume, distribution and age of equipment, and "Inventory of Foundry Materials Handling Equipment" is a market study of types and amount of equipment used in the foundry industry.

House & Home, 9 Rockefeller Plaza, New York 20, N. Y. Four studies: "Selling the Home Building Market Today," outlines new methods of building and buying, and discusses builders, architects, dealers, lenders, realtors and how these groups operate. "Building Market Facts" covers housing characteristics, home remodeling expenditures and building activity by regions. "A National Study of Builders and Contractors Who Attended 1956 NAHB Convention" describes their activity in home building, home remodeling, non-residential home construction, and related facts. "The Model Home," details how demonstration model homes have become the builder's best selling aid.

Industrial Distribution, 330 W. 42nd St., New York 36, N. Y. "Industrial Distributors . . . Their importance to American Industry" presents a picture of the field of industrial distributors: who, what and where they are, and their value to industry. Included is a partial list of the products sold by distributors; number of industrial distributors by districts and states; pattern of industrial purchases. (35¢ a copy).

Industry & Welding and Welding Illustrated, 812 Huron Road, Cleveland 15, O. Two reports: "Study of 1,485 Independent Welding Supply Distributors" reports on the lines handled by distributors and independent wholesalers of welding supplies. "Here's What It Takes to Sell the Growing Market for Welding, Cutting & Brazing Equipment in the United States." This is a state-by-state breakdown

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29,000,000 SALES CALLS A YEAR! Industrial distributor's salesmen run up a total of 2,400,000 calls a day. They blanket industry, big and small, coast to coast, Gulf to Canada, major trading areas and smaller manufacturing centers. Call on manufacturing plants, mills, mines, quarries, oil fields, service industries.

MILLIONS OF ESTABLISHED CONTACTS! This national network is built on unduplicated local impact — intimacy with local conditions, contacts of long standing with all the key buying-specifying factors.

SALES HIT \$4.5 BILLION LAST YEAR! Industrial distributor organizations are making a greater and greater dent on the country's industrial buying power. Sales were up 14 percent last year. Turnover accelerated 7.1% — and sales per salesman and dollar volume per individual order were both up.

THEY HANDLE ALMOST EVERYTHING! Distributors' lines run all the way from industrial machinery, power and hand tools to materials handling equipment,

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DISTRIBUTORS AND THEIR SALESMEN LIVE BY ID! Their magazine is INDUSTRIAL DISTRIBUTION. They read it to operate better, to sell more effectively. If you have anything to say to them . . . whether you're trying to get more out of your present distributors, or are seeking new outlets for your products — talk to them by direct wire, via . . .

Industrial Distribution

A McGRAW-HILL PUBLICATION
330 WEST 42ND STREET, NEW YORK 36, N. Y.



of major marketing areas in which welding, cutting and brazing equipment supplies and accessories and auxiliary shop materials and equipment are purchased.

Institutions Magazine, 1801 Prairie Ave., Chicago 16, Ill. Five studies: "How to Sell to Government Institutions" discusses government institutions in two principal groups—military and civilian, and only on the federal level; gives data on what they are buying; who buys for government "military" institutions; Army purchasing; who buys for government "civilian" institutions; how to enter bids; things military procurement officers want to know about your business. "The Institutions Market for Air Conditioning Equipment" includes data on growth; institutions in the air conditioning market; results of surveys conducted in Detroit and Baltimore; dollar volume of institutions field purchases of air conditioning equipment, 1954-1959; tips on how to sell to institutions. "Survey of Cooking Equipment" gives results of a survey of food service dealers and users of cooking equipment to determine what factors they look for in selecting lines to sell and what lines are being used or planned for purchase by institutions. "Survey of Institutions on Venetian Blinds" presents data on use of them; age of blinds in use; what blinds are favored; what institutions' management considers the advantages and disadvantages to be. "Institutions Furniture

Survey" includes data on use of wood, metal, and upholstered chairs, folding chairs, office furniture and service desks; present and potential marketing opportunities for each type of furniture item in the composite mass-housing, mass-feeding industry.

Iron Age, Chestnut and 56th Streets, Philadelphia 39, Pa. Five reports: "Air Conveyors as Used in Metalworking Plants," to ascertain the extent they are used for transporting bulk materials and components. "Grinding Wheels and Coated Abrasives," a survey of purchasing agents in 8,000 metalworking plants for dollar purchase data relating to their purchases. "Refractories in Metal-producing and Refractory Plants" covers types of metalworking plants that use refractories and types of refractories used in those plants; relative importance of three factors—price, specifications, availability—in influencing the selection of sources of supply. "Uses for TV Sets in Metalworking Plants and Offices" presents data on the extent to which industrial closed-circuit television is used, and the places in which it is used. "Flexible Metal Tubing for Use within the Plants of the Metalworking Industry" covers applications; how much is purchased in a year for replacement and for expansion of operations within the plants.

Marine Engineering/Log, 30 Church St., New York 7, N. Y. Four studies: "1957

Data Digest" reports the 1957 merchant and naval shipbuilding program; dollar volume and number of ships involved; ship repair and operation developments; tells where marine sales originate and describes key buying factors. "The Marine Market for Paint" tabulates estimated requirements for paint and protective coatings in the marine industry, including quantities needed for maintenance of existing fleet and for new construction. "Plastics Are Getting Sea Legs" reviews use of plastics aboard ship; opportunities for expanding the adoption of plastics for a wide range of uses in marine service; discusses characteristics of various types of plastic materials; includes bibliography. "The Marine Market for Valves" presents estimated requirements for valves on 315 merchant vessels under construction in U. S. shipyards on January 1, 1957; gives number of valves by types of vessels and dollar value; includes detailed list of the value on a 21,000 gross-ton tanker.

Materials in Design Engineering, 430 Park Ave., New York 22, N. Y. Seven studies: "Stainless Steel Market Study" includes data on forms in which stainless steel is used, including strip, sheet, bars, tubing, forgings, castings, wire, plate, powder metal parts. A special section reports specifying practices in chemical process and atomic industries. "Finishes, Coatings, Surface Treatments Market Study" reports on the use, by plants

manufacturing original equipment, of organic coatings, inorganic coatings, metallic coatings, conversion coatings and mechanical finishes. "Tubing, Pipe and Tubular Parts Market Study" presents data on use as original equipment of both (1) mechanical and structural tubing and (2) fluid-carrying tubing tabulated by S.I.C. and according to materials such as steel, iron, aluminum, copper, nickel, magnesium, plastics, rubber, ceramic, and glass pipe and tubing. Reports form in which each is used as seamless, welded, extruded, molded, cast. "Joining and Fastening Market Study" reports on use in manufacturing plants of (1) welding, brazing and soldering methods; (2) bonding and adhesive joining; (3) mechanical fasteners and fastening methods (including threaded fasteners, staples, specialty fasteners, wire stitching, etc.) Data broken down by S.I.C. "Aluminum and Magnesium Market Study" covers the use of aluminum and magnesium in original equipment manufacturing plants. Data are presented by S.I.C. according to 19 different forms including sheet, strip, bar, plate, tubing, forgings, castings, extrusions, stampings, prefinished metals wire and wire forms. "Plastics Materials and Parts Market Study" provides data on the market for plastics materials and parts within the U. S. hardgoods manufacturing plants. Includes data on 18 different types of plastics (acrylics, alkyls, celluloses, epoxies, fluorocarbons, etc.), and includes a special section on various plastics foams. Data broken down by S.I.C.

National Petroleum News, 330 West 42nd St., New York 36, N. Y. "1957-58 Factbook." A statistical and reference data book for oil and TBA marketers. Key features this year include NPN's jobber survey results; equipment and TBA directories; latest bulk plant census; production distribution lineup; where big companies market; who's who in oil marketing, plus the NPN forecasts. (\$1 a copy).

Nation's Business, 711 Third Ave., New York 17, N. Y. Three reports: "A Study of Buying Plans and Readership of Magazines Conducted Among Municipal Board Officials in Towns Over 2,500 and Up to 25,000 Population." It includes data on total assessed property in each community, total operation budget less debt service, public utilities and operating budgets, capital improvements, buying plans. "A Study of Buying Plans and Readership of Magazines Conducted Among School Board Officials in towns Over 2,500 and up to 25,000 Population" covers total number of pupils in each school district, plant and facility enlargement or improvement and cost, planned improvements and total cost. "A Survey of Buying Plans Conducted Among Banking Officials" include planned purchases for exterior, interior and office equipment; automobiles owned or rented for business use.

Newsweek, Newsweek Building, Broadway and 42nd St., New York 36, N. Y. "Capital Appropriations," a project which

is being conducted for *Newsweek* by National Industrial Conference Board, Inc. It reports on the total amount of capital appropriations which have been made by the top 1,000 manufacturers. Appropriations are in effect authorizations to spend. They may be spent during the calendar year in which they were established or they may be spent 18 to 24 months hence. Thus, the findings from this study are a measurement of market potential within the capital goods field.

Occupational Hazards, 1240 Ontario St., Cleveland 13, O. Six reports: "The Market for Floor Cleaning Machines" provides data on which plants use them; what kind of machines they use; what price machines they buy. "The Safety Equipment Distributor" details who he is; what lines he carries; where he does his volume. "The Plant Safety Man" reports on who he is; what are his chief duties; what is his educational background and age; what are his influences in the plant; what he buys. "Plant Fire Brigades" provides data on how many plants have them; how many men are in them; how much training they get; amount of hose and number of nozzles, fittings, clamps, etc. they use—by size of plant and type of business. "The Industrial Market for Ladders and Scaffolds" covers how big it is; which industries use the largest quantities; how important is the size of the plant; who buys. "The Market for Safety Equipment and Fire Extinguishers" gives data on how much the average plant spends for head and eye protection, protective clothing, safety shoes, fire extinguishers; where they buy; what activates their safety programs.

The Oil and Gas Journal, 211 S. Cheyenne, Tulsa, Okla. Three reports: "Process Equipment for the Oil and Gas Industry" is a study of U. S. refineries, their capacities and facilities, and who has a voice in plant buying. "Pipelining Is Everybody's Business" analyzes pipelining by production companies, by field processing plants, by refineries and petro-chemical plants. "Those Who Say 'Yes' in the Buying of \$1,800,000,000 Worth of Drilling Equipment Annually" presents data on what drilling contractors buy and how operators influence what they buy.

Packaging Parade, 22 East Huron Street, Chicago 11, Ill. "Size of the Packaging Market." Latest available estimated statistics on the packaging market, showing 1954, 1955 and 1956 sales at the manufacturing level. Data compiled from Government and industry sources.

Petroleum Refiner, 3301 Buffalo Drive, Houston, Tex. "The Petroleum Refining Industry" presents facts and figures currently available on the huge refining-processing market: trends, industry expenditures, world-wide refining picture, equipment usage, list of refineries and other plants, purchasing pattern.

Pipe Line Industry, 3301 Buffalo Drive, P. O. Box 2608, Houston, Tex. "Sales

Information on the Pipe Line Market. Included in this market data file: industry forecast, expenditures, equipment usage, proposed pipe line projects, equipment used in the industry, trends and developments, operations of typical companies, list of U. S. pipe line companies, industry buying practices and sales tips.

Practical Builder, 5 S. Wabash Ave., Chicago 3, Ill. Three reports: "Tool and Equipment Survey" gives data on ownership and purchases of 24 representative tool and equipment items among contractor-builders. "Portable Power Tools and Heavy Equipment" is a survey of total investment, use, buying habits and intentions. "Heating Equipment" analyzes builder and architect influence in the selection of the type and make of equipment used in contract building.

Precision Metal Molding, 812 Huron Road, Cleveland 5, O. "How 923 Plants Finish Die Castings and Other Precision Metal Molded Parts" answers such questions as: How much finishing is done on precision metal molded parts (die castings, investment castings, permanent mold castings, plaster mold castings, powder metal parts, shell mold castings)? What types of finishes are used? Who's responsible for selecting them—for getting the job done? Also "Precision Metal Molding Production Data Book for 1957" which reports on total amounts of parts produced; processes for producing these parts; captive vs. contract production.

Product Engineering, 330 W 42nd St., New York 36, N. Y. Seven reports: "Compressed Air Power" includes data on air applications in the metalworking market; air compressors; air motors; components used, and applications for pneumatics. "Road-Machinery Building Industry" covers types and numbers of equipment in use; types and numbers of equipment needed; market for tools, machines, materials and processes sold to design engineers. "Who Buys Motors," "Who Buys Relays," "Who Buys Belt and Chain," "Who Buys Plastics," "Who Buys Extended Shapes and Tubing" all outline industrial buying practices for these particular products.

Railway Age, 30 Church St., New York 7, N. Y. Six studies: "How to Flag Down More New Business in Railroading" analyzes trends in railway buying; what's ahead in purchases; the industry's long-range buying needs; how to reach the men who make the railway market. "Your Railway Market from Now to 1965" reports the outlook for buying; trends; long-range expenditures for facilities needed to build railroads of the future. "1956 Installation of Diesel-Electric Locomotive Units" provides installation tabulations showing number of units in various horsepower classifications installed by individual railroads; number furnished by various builders, and total installations by various classes of railroads. "Radio Communications Equipment on U. S. Railroads" is a tabulated summary of present and needed installations. "Opportunity Ahead" for



With always-current, Colorific-indexed catalogs in Heinn Loose-Leaf Binders, salesmen and dealers find three-second answers instead of fumbling for information.

They free their minds for *creative selling* — new sales arguments, marketing suggestions, new ties-in with other products. Your sales go up and selling costs drop in relation to volume.

Nearly 90% of sales executives contacted in a recent survey said that Heinn Loose-Leaf Binders had helped their salesmen and dealers. Such help invariably opens the way to creative selling . . . so you can close more sales!

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HEINN

casts future trends in U. S. freight traffic over the next decade. "Automatic Retarder Equipped Classification Yards" lists, by railroads, the number of yards equipped with electric and electro-pneumatic car retarders; gives location of yards, number of tracks and types of retarders installed.

Sales Meetings, 1212 Chestnut St., Philadelphia 7, Pa. "Meeting Planners Hand Book" is a compilation of articles from *Sales Meetings* magazine to aid the convention planner (\$50¢ a copy). Also individual reprints such as "Executive Cue Sheet for Planning a Meeting," "What I've Learned from My 11,000 Speaking Engagements," "40-Point Check List and Four Rules for Planning," "Guide to Styles, Groups, Methods for the Modern Meeting Planner," "Here's How to Cash in on Sales Meetings."

Steel, Penton Building, Cleveland 13, O. Three new basic marketing aids for industrial companies selling into the metalworking industry: "Metalworking Mar-

kets in the United States," a 246-page book which presents a 4-digit S.I.C. analysis of the location of all metalworking plants with 20 or more employees at the county level. The number of metalworking employees in each 4-digit industry in each county is also included. In addition, there is detailed information about the 21 major metalworking operations performed. This book sells for \$25 a copy. "Metalworking Markets of the United States" is a four-color map, approximately 37" by 23", which depicts the metalworking markets in the United States, and shows the geographic distribution of metalworking employees by counties. Sells for \$1 a copy. "Analysis of United States Metalworking," a 32-page booklet which is a digest version of the large census volume. Available without obligation.

Tourist Court Journal, Temple, Tex. "Inside Information on Today's Tourist Court Market" includes data on size, construction, repairs, heating and cooling, furnishings and fixtures, laundry

Sales-fashioned Heinn Loose-Leaf Binders make your salesmen more productive, keep your product messages before dealers between sales calls, reduce order correspondence and impress your trade. Thousands of sales executives know these facts because they're Heinn customers. You can learn the sales-making Heinn plan by mailing this coupon:

THE HEINN COMPANY, 314 W. Florida St., Milwaukee 4, Wis.
We are listing quantities of items on which we'd like complete information.

- Salesmen's Catalog Binders
- Dealer Catalog Binders
- Manual Covers (Sales, Service, Parts)
- Price Books
- Colorific Indexes
- Send "Facts at Your Fingertips," Heinn's new booklet for the catalog planner.
- Have your representative call.

Name _____

Firm _____

Address _____

City _____

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and cleaning facilities, service stations, coffee rooms, supplies, plans for construction of new courts. Also surveys of these products in the market: louvered or jalousie windows; plastic wall tile; showers, tubs, combination tub-showers; electrical generators; stoves; linens, blankets; incinerators, glasses and dishes; served coffee; insecticides.

U. S. News & World Report, 24th & N Streets, N. W., Washington 7, D. C. "Government Biggest Customer of Them All." This study shows the size and scope of the U. S. Government as a customer of industry. Also "How Business Forms Are Bought and Used" which is a detailed market study.

World Oil, 3301 Buffalo Drive, Houston, Tex. "Market Data on the Oil Drilling Producing Industry" presents facts, figures and sales tips on how to sell to the oil drilling producing industry. Included are forecasts and predictions, market scope and growth, buying practices, equipment usage, etc.

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38 Check Points for Plant Locating

(Continued from page 119)

We know of another instance in which a community lost an industry on non-economic grounds. The mayor of this town, trying to impress company officials with the wonderful business climate which his community offered, boasted that the community would have nothing to do with a company that ever "played footsie" with a union. No sir, no unions for him! The President of the company then asked quietly: "Am I to assume then, Mr. Mayor, that we are to commit ourselves in advance to fight unionization by whatever means available?" When the answer was "Yes," the company simply didn't feel free to make such a commitment.

We can sum up this point by saying that any location study should

embody the following broad aspects:

1. The determination by management of the locational factors which have a bearing on the particular project and the assigning of relative degrees of importance to these factors.

2. Narrowing down the areas of choice through a careful statistical analysis of the basic economic patterns of the states, counties and communities that lie within the region of choice.

3. Securing more detailed information from the communities and areas that have passed the tests in the preceding paragraph. Analyzing and tabulating this information as nearly as possible on a comparable basis.

4. A field investigation of the communities and areas which have sur-

vived the investigations of step 3.

5. Assimilating all information gathered and evaluating it in the light of the company's criteria.

We can say, then, that plant location can be, and should be, scientific in the realm of fact-gathering but that it is somewhat of an art in the realm of evaluation.

The average company and most consultants feel that their plant location job is finished when they have found a location that makes sense—today and as matters now stand—for their company or client. To be sure, with respect to their own operation, some attempt will be made to allow for anticipated future developments. Indeed, the whole search for a location may be based on what the company expects to happen in its future.

Is this really enough? Sometimes, but we in our organization believe that frequently it is not enough. Perhaps I can illustrate with a concrete case. We were recently engaged to select a location for a very large, fast-growing company. The new facility they proposed to establish was to start with 1,500 employees, all high school graduates as a minimum requirement, and reach a full complement of 6,000 employees within four years after dedication. Their policy is to shun large metropolitan areas and their preference, for this operation, lay with cities between 25,000 and 100,000 population. The plant was destined to have a high percentage of technical and professional men, and for this reason our client was extremely exacting in the standards which were set for the selected community. It had to be pleasing and dignified in appearance; it had to have above-average schools; it had to be accessible by rail and air and also within 100 miles of a large metropolitan and cultural center. Preference would be given to a community having but little industry. Most of the normal cost criteria were subordinated to these essentially "social" aspects.

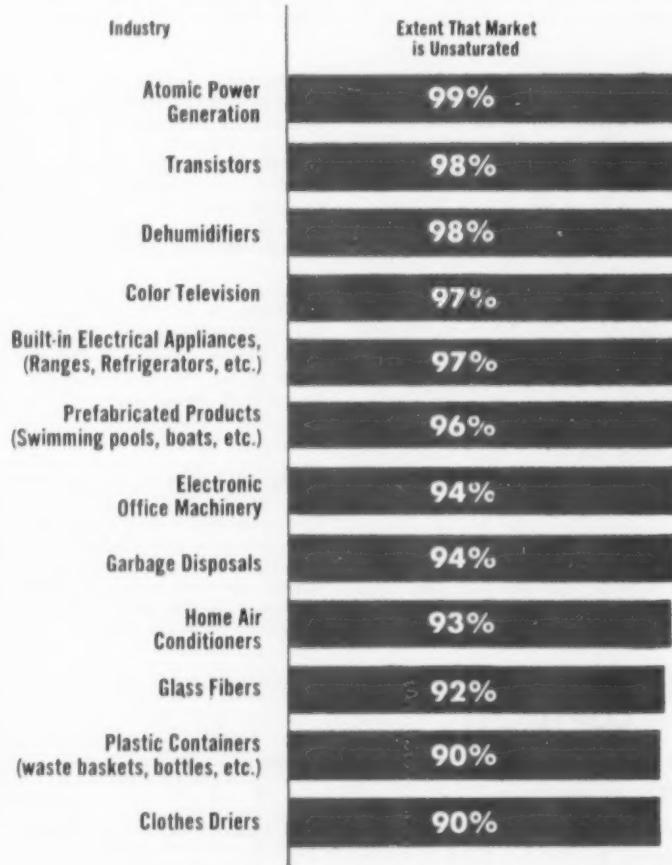
Industry Workers Create New Jobs

The community we ultimately selected had a population of about 35,000.

At the time the selection was made, there were 17,000 persons gainfully employed in the community and the surrounding county, which, incidentally, encompassed about 85% of the labor-draw area.

It is generally recognized that for every ten primary jobs in industry eight persons are employed in sup-

SOME YOUNG INDUSTRIES WITH EXTRAORDINARY GROWTH PROSPECTS



porting service occupations. Thus, our client, in adding 6,000 primary jobs to the employment base of the community could also be expected to add a further 5,000 supporting jobs—or, in all, 11,000 new jobs. We reasoned that if the county could provide jobs for 17,000 without any appreciable unemployment, the introduction of 11,000 new jobs would inevitably bring about a rapid influx of new residents attracted by the availability of work. This in turn suggested an increase in population from the present 35,000 to something of the order of 50,000 in an unusually short time.

What would this sudden prosperity, this sudden influx, do to the town? To put it briefly, it seriously risked destroying the very attributes which had made the community attractive to our client in the first instance. To prevent this, we insisted, before the community knew the identity of our client, that it guarantee in writing to take two essential steps to control and direct the anticipated growth:

1. The appointment of a county-wide zoning authority committed to the establishment of a new "standards

of performance" code.

2. The employment of a qualified planning consultant to develop a long range master plan and the employment of a county planning engineer to supervise the carrying out of the master plan.

While these devices obviously neither prevent nor slow down rapid growth, they at least insure that it take place in an orderly and controlled fashion.

Incidentally, the school board was on the point of putting a school expansion program before the voters at the time. We suggested to them that they hold up their proposals until our client had announced his decision, that that they take into consideration the possible impact of our client's operation on the school system and raise their sights accordingly. This they did and, as a result, a bond issue twice as big as the one originally intended was passed by an overwhelming vote.

As this illustrative case suggests, we, as consultants, feel that we have an obligation to our clients that extends beyond the day and hour when

our recommendations are presented. However, we also feel that we have an obligation to the communities into which we put industries. It is to nobody's benefit if our client's facilities adversely affect a community because of an ill-selected site, an indifference to the community's needs, or an overloading of its facilities. The trick of parking a plant just outside the city limits, where it escapes city taxes, and then causing city schools to be jammed to the rafters is as short-sighted as it is self-defeating. Yet it has often been used.

This practical approach to plant location inevitably leads to our helping communities set up and plan sound industrial development programs. This, however, falls outside the confines of our present subject. To any individual or concern responsible for the location of an industrial facility, be it manufacturing plant, warehouse, research center or what-have-you, we say: "Use your bargaining power to encourage the communities you are interested in to safeguard their future (and yours) by protecting their existing values and planning wisely for future development."

Sales Management's

1957 COUNTY OUTLINE RETAIL SALES MAP OF THE U. S.

Shows
at a glance
comparative
Retail Sales Strength
of every county
... 27" x 41"
... in 6 colors

1. All Metropolitan County Areas clearly defined.
2. County names . . . for all U. S. Counties . . . most legible of all the many outline maps we have seen.
3. Differences in retail sales volume indicated by County shadings . . .
 - Red—for counties with \$100 million or more.
 - Green—for counties with \$50 million to \$100 million.
 - Yellow—for counties with \$25 million to \$50 million.
 - Blue—for counties with \$10 million to \$25 million.
4. 1750 cities with retail sales of \$20 million or more.
5. City populations indicated—(as of January 1, 1957).
6. Special blown-up projections of all congested small-county areas, with county lines and names clearly indicated.
7. Special markings indicate counties whose family sales exceed U. S. family average.

PRICE: \$3.50 a single copy; \$3.00 each for two or more copies

SALES MANAGEMENT, 386 Fourth Avenue, New York 16, N. Y.

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Born: A New Industrial Advertiser

Head of new Fiber Division, W. R. Works introduces CreZon, which has been in new product development seven years. An interview with E. P. Partland, Manager, Industrial Sales, Crown Zellerbach Corp. Page 86, March 1.

BUSINESS GIFTS

Pemco Abandons Traditional Gifts, Makes Charity Donations Instead

An industrial manufacturing firms, stains, and related products reports excellent response to contributions made in buyers' names to National Society for Crippled Children and Adults. By Thomas S. Hook, Manager, Advertising and Public Relations, Pemco Corp. Page 118, March 15.

COMMUNICATIONS

Copies in Jig-Time: Lewis-Shepard Speeds Up On Sales Communications

Problem: So many people, so many departments, need copies of orders, directives, product specifications, price changes and other sales intelligence. And they need them fast. This materials handling company has now found a better way to produce them. Page 66, June 7.

GENERAL MANAGEMENT

How to Make a Market Your Market

The sales chief who coined the truism "It is much more important for a business to own a market than a mill," explains. By David F. Austin. Page 29, January 4.

For Motivation of All Employees, Take a Look at Profit Sharing

It embodies deep implications for Sales, and the movement is growing. Here is a quick-reading primer of 16 questions and answers which cover major points in the "how" and "why" of this powerful management tool. By Rawson L. Wood, President, Arwood Precision Casting Corp., and Chairman, Council of Profit Sharing Industries. Page 34, February 1.

Is Communication Failure the Weakest Link in Management? If It Is, why?

Answer: We do not understand the nature of communication, nor are we skilled in the techniques that make

In each issue throughout the year Sales Management publishes articles of particular interest to marketing executives in industrial companies, as well as to sales people in consumer-type firms who are looking for successful ideas from many fields.

For your convenience in looking up articles of special industrial application that have appeared in Sales Management since January 1, we have made up this special index.

communication effective. Yet none of us can be successful managers without engaging in communication every day of our business lives. This clear-cut discussion of the subject—if you absorb and practice the principles it spells out—can make you a more efficient executive the minute you finish your reading. By William R. Kelly, Manager, Sales Promotion, Sinclair Refining Co. Page 29, March 15.

Peter Hurst's Nice Little Growth Firm

30-year-old Peter Hurst threw in the idea and 10 "visionaries" anted up \$10,000 to found Aeroquip. Now 47-year-old Hurst can count his \$100,000-plus annual salary and \$4 million in capital gains. What types of men helped? By Grant Jeffery. Page 29, May 3.

Every Company Needs It: An Annual Sales Audit

Far too many firms trundle along year after year without pausing to take a bearing . . . to nail down specific answers to questions as:

- How are we doing on market position—gaining or losing?
- What degree of acceptance do we enjoy for our present product line?
- What can we do to correct those weaknesses? By Corning White, Management Consultant. Page 72, May 17.

Good Selling Is Good Communications.

By William J. Tobin. Page 62, May 17.

What's the Use of Planning If You Don't "Follow Through?"

That's the feeling at G-V Controls, Inc. The firm is young, and as companies go, it's small. But it's a giant sales success. Reason: It isn't content

just to make plans; it follows through on all counts. Do You? Page 81, May 17.

INDUSTRY SELLING

Powerful Sales Aids for Selling to Industry

They're powerful because they establish proof of performance. But typical sample-users point out the need for careful screening of requests in order to hold costs of sampling within reason. By Etna M. Kelley. Page 97, May 17.

Volume Doubles in Two Years After Sales Shakeup at Reed-Prentice

This 120-year-old firm making plastic molding machines with price tags of \$20,000 to \$50,000 is rapidly regaining its lost position in the tool industry as a result of a new management program which involved: Research to define the market; Separation of sales and service; Elimination of manufacturers' representatives; A new sales control setup; A new sales training plan. By Charles B. Alling, Jr., President, Hile-Damroth, Inc. Page 65, May 17.

INDUSTRIAL MARKETING

Planning Cuts the Risk When You Introduce New Industrial Products

Victor seeks no theatrical themes or off-beat promotion stunts when it adds a new product to the line. It sticks to the A-B-C's: adequate pretesting, careful cost-accounting, creation of hard-working literature, and sales training. This approach has resulted in rapid line diversification. By E. A. Daniels, Vice-President, Sales, Victor Equipment Co. Page 64, March 15.

MANPOWER

Sales Recruiting in 20 Minutes

"A successful college interviewer," according to the booklet, 'College Recruiting This Year,' issued by Diamond Alkali Co., Cleveland, "is one who not only can spot the valuable graduate, but also can persuade him to cast his lot with us." Here's how Diamond says to utilize your time with each candidate. Page 37, May 3.

PACKAGING

Why So Many Industrials Specify Mellowes Lock Washers

Functional packaging creates new

benefits that have strong appeal for buyers. Among them: reduced handling expense, elimination of counting and weighing, reduced hazards of spilling and mixing sizes, speedier inventories. Page 80, March 15.

PRODUCT DESIGN

Industrial Design Can Help You Sell

Good product design consists of more than "prettying up" the appearance of your line. Design can solve functional problems as well, resulting in the creation of added sales features and in greater satisfaction to the customer. Page 44, June 21.

NEW PRODUCTS

What's Still Old in Your Line?

Page 38, February 15.

PUBLIC SPEAKING

Should You Illustrate Your Talks?

We live in a visual age. The result is that many of today's audiences not only accept, but expect visual reinforcement of a verbal presentation. Yet, not everyone knows how to use such aids effectively. Do you? By John E. Duncan, Manager, Audio-Visual Programs, General Electric Co. Page 52, June 7.

"I'm Not a Professional Actor, Why Should I Be a Good Speaker?"

How you can improve your audience contact—your ability to get attention and sympathy. Good audience contact is as essential for a speaker as a signature on the order is for the salesman. With it a mediocre talk might make a hit. By Bruce H. Burnham, Distribution Transformer Department, General Electric Co. Page 94, April 19.

SALESMANSHIP

Vaughn Monroe's A Salesman Now...

RCA turns a TV personality into sales ambassador extraordinary. Page 34, January 4.

An Institutional Purchaser Looks at Salesmen

By David S. Gibson, General Manager of Purchases, Worthington Corporation. Page 46, June 7.

"70% of Industrial Sales Calls Are Ineffective and Worthless"

By Herbert A. Hamilton, Jr., Supervisor of Purchasing, Instrument Dept., General Electric Co. Page 82, April 5.

Emergency, Hustle, 'Phone Turn Rolled Steel Into Big Small Business

"When you're looking for new techniques, keep your eye on the fellow who's small and coming up the ladder. He's got nothing to lose but his shirt, and he'll try anything. The big outfits don't want to gamble. They know how to make money doing it the ordinary way." —Robert H. Corbett. Page 60, February 1.

How to Sell Higher Prices—At a Profit

Consider the offensive bid: "When you pick up your cards and you are holding a powerhouse, aces and faces in every suit and a string of trumps as long as your arm—the question is not 'Can I get the bid?' Is is, 'How high can I go without taking too serious a chance of being set?'" . . . Now look at the defensive bid: "It is far more complicated than the offensive and much more common. Here you pick up a hand of average strength, or somewhat less. Your tactics are to make the most of what you have, hoping to take the contract by the use of other values . . . which will offset your opponent's power—his PRICE." By C. E. Bennett, District Marketing Manager, Western Gear Corporation of Texas. Page 78, April 19.

SALEMEN'S COMPENSATION

2% More Incentive for "Reps" Cleans a Jammed Warehouse

Under circumstances in which many a

manufacturer might be tempted to save dollars by cutting commissions and cutting prices, ORRadio elected to see what would happen if commissions were increased. Payoff: Sales up 62%. By Nat Welch, Vice-President, Sales, ORRadio Industries, Inc. Page 100, June 7.

SALES TRAINING

American Bitumuls Subsidizes Outside Study for Sales Engineers

FIRST OBJECTIVE: to make men more efficient in their present jobs. SECOND OBJECTIVE: to help prepare men for the bigger jobs that are opening in a fast-growing company. THIRD OBJECTIVE: to find and develop sales talent in other departments. Page 70, April 19.

"Machinery Men, Meet Emily Post: She's Your New Teacher"

Well, Crown Cork & Seal Co. didn't say it just that way, but it did include a course in social behavior in its latest training curriculum . . . and with Emily as the authority. Object: Smoother relations with customers by more attention to courtesy and tact. Page 94, June 7.

SELLING IDEAS TO MANAGEMENT

What to Do . . . How to Do It . . . When You Take an Idea to Top Management

What do you want to sell to "the brass"? Change of policy? Program of action? A budget? If you are to get the nod, you must present a clear and organized case, talk in terms of management benefits, anticipate objections, and supply a full measure of supporting facts and figures. By E. C. Bill, Administrator, Presentations, Radio Corporation of America, Commercial Electronic Products. Page 29, February 15.

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SALES MANAGEMENT



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Today there is a new and inexpensive way to identify and clarify your best sales appeals. It is a highly specialized type of personal sales investigation which we have developed over a period of many years.

We call it "Ditch-Digging" research. It digs into the interests and informational needs of your potential customers.

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All of our trained investigators have had successful sales experience. They conduct each interview with an astute "sales sense" that smokes out the true picture of your best sales approaches.

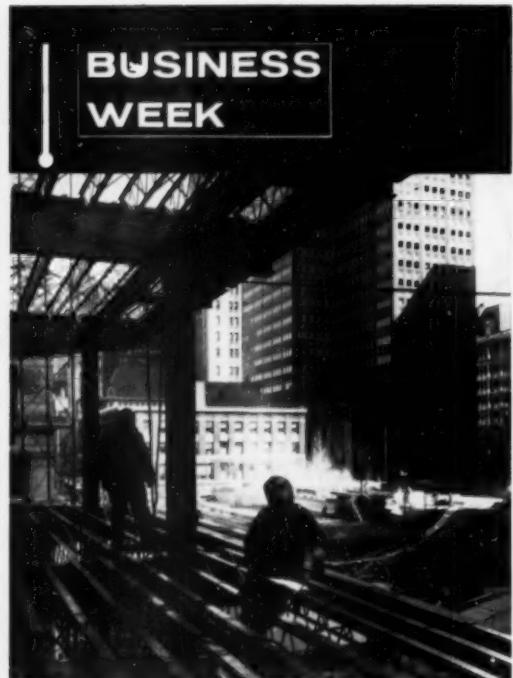
This, inevitably, reduces the guesswork that hampers advertising effectiveness.

If you'd like to hear how other companies have used Hopper Company Sales Investigations to get "Ditch-Digging Advertising That Sells by Helping People Buy," just say the word. There are many actual cases we can tell you about.

The Schuyler Hopper Co., Sales Investigation • Sales Promotion • Advertising

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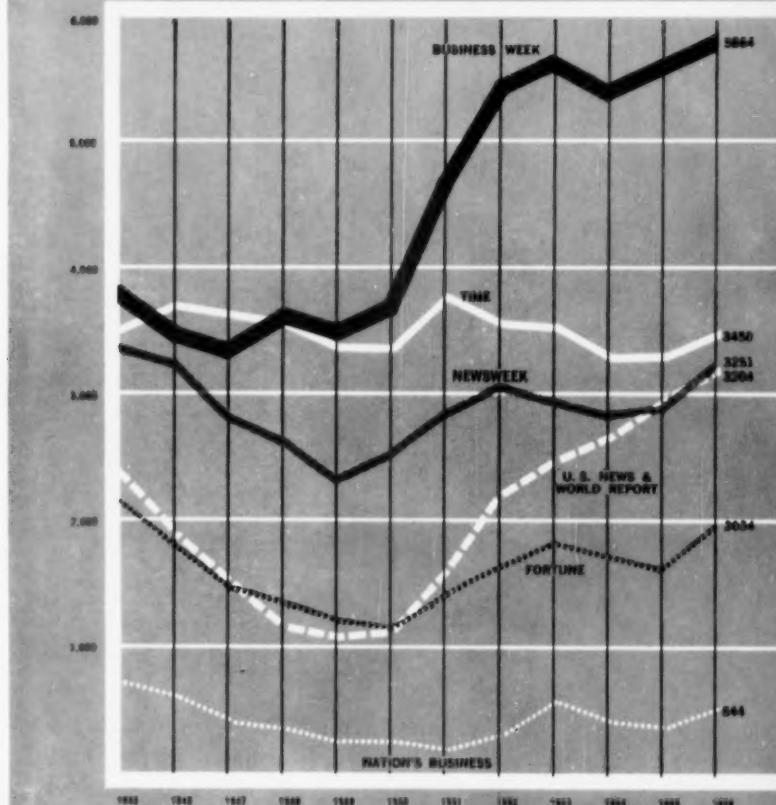
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Advertising Trends, 1945-1956 Total Advertising Pages



BUSINESS WEEK

is selected by nearly twice as many business advertisers

NUMBER OF BUSINESS ADVERTISERS, 1956

BUSINESS WEEK	847
U.S. NEWS & WORLD REPORT	449
FORTUNE	434
NEWSWEEK	373
TIME	317
NATION'S BUSINESS	157

to carry over twice as much business advertising

PAGES OF BUSINESS ADVERTISING—1956

BUSINESS WEEK	5,598
U.S. NEWS & WORLD REPORT	2,607
NEWSWEEK	2,255
TIME	2,007
FORTUNE	1,826
NATION'S BUSINESS	486

and nearly half of them advertise in no other leading general-business or news magazine

NUMBER OF EXCLUSIVE BUSINESS ADVERTISERS, 1956

BUSINESS WEEK	373
FORTUNE	164
U.S. NEWS & WORLD REPORT	56
TIME	41
NATION'S BUSINESS	40
NEWSWEEK	33